UNIVERSITY FOR DEVELOPMENT STUDIES

APPRENTICESHIP TRAINING AND HUMAN RESOURCE DEVELOPMENT IN TAMALE METROPOLIS: THE CASE OF AUTOMOBILE INDUSTRY

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DISSEATION SUBMITTED TO DEPARTMENT OF COMMUNITY DEVELOPMENT, FACULTY OF PLANNING AND LAND MANAGEMENT, UNIVERSITY FOR DEVELOPMENT STUDIES IN PARTIAL FULFILLMENT OF THE AWARD OF MASTERS OF ARTS DEGREE IN ENVIRONMENTAL SECURITY AND LIVELIHOOD CHANGE

NOVEMBER, 2010
DECLARATION

I hereby declare that this dissertation is the result of my own original work and that no part of it has been presented for another degree in this University or elsewhere:

Candidate’s Signature................................................. Date........................................

THEODORE KOFI AQANAM

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University for Development Studies.

Principal Supervisor’s Signature...................................... Date........................................

DR. E. S. MOHAMA
The study looked at Apprenticeship Training and Human Resource Development in the Tamale Metropolis, a case study in the automobile industry. In Ghana apprenticeship training in the informal sector is mostly practical based and the duration of the trade can take from months to years depending on the type of trade. The most common trades are tailoring, blacksmithing, metalwork, carpentry, masonry, and automobile mechanics.

Some characteristics in the apprenticeship training in Ghana are the lack of uniformity in training content, duration and certification. These gaps created through these in the automobile industry are what the study addressed in the case of Automobile Engineering in the Tamale Metropolis. Ninety-one apprentices were sampled through Stratified sampling. Quantitative data was collected through the use of questionnaires. Qualitative data interviews were done with key informants and stakeholders of educational institutions, master mechanics and customers.

It was revealed through the data that persons below the ages of 10 years were engaged in apprenticeship training. They abandoned their education and went to learn a trade. Most youth within the ages of 15 to 35 years in the study are engaged in the apprenticeship training. The study identified that 18% of apprentices have not had any formal education. The number of years apprentices spend in the training varied from 1 year to 13 years. Also it was identified that there is variation in the amount of fees apprentices pay. This ranges from 10 to 180 Ghana cedis. This affects the poor and rural youth who would like to learn the trade but cannot pay the fees and living expenses. The training content is without the basic Mathematics, Science and Engineering Drawing which are important subjects for the automobile course. The study found that there is lack of uniformity in the training content, duration and certification. Every trainer/master uses his own standards to his convenience. The Government needs to empower the Polytechnics, Ghana education service and Ghana Institution of Engineers in the country to draw a training programme for these apprentices.
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CHAPTER ONE
INTRODUCTION

1.0 Background

All over the world more and more people find it difficult to get employment. The plight of out-of-school, unemployed youth in most developing countries has been largely ignored because the national priorities in education were focused on academic talents. The Educationist in the years passed, seemed relatively unconcerned about the occupational preparation and placement of youngsters who are seeking a place in the world of work (Conant, 1961). Emphasis has always been on academic achievement. Many educators look upon vocational preparation as a mere job training and they see the mechanic, for example, as being engaged in a mere job, whereas they ascribe the term career to occupational fields such as medicine, law, science, business and arts (La Duca, and Barnett,1974).

Technical and vocational training in the formal sector in Ghana have had little support over the years. However, the worst affected sector is apprenticeship training in the informal sector. Meanwhile, hundreds of thousands of young people are engaged as apprentices in the private or informal sector. The latest labour force data showed that in 2000, informal apprenticeship sector contributed over 70% of self employment among the total labour force of over 7 million. There were 207,047 economically active people (15 years and older) in apprenticeship training (Ghana statistical service 2005) over three-quarters (76.8%) of the apprentices were aged 15 - 29 years; 18,006 were males and 89,041 were females. The males were mainly in auto-mechanics, carpentry, tailoring and driving while the females were found in dressmaking, tailoring and catering (Donkor, 2009).

“Vocational training, like education in general, must never lead to dead ends but must help young people to move horizontally to other occupations and vertically to higher responsibilities of future opportunities”. (Myrdal, 1965). With the present system of apprenticeship, masters in the various trades teach apprentices the way that they were taught and there has been little infusion of new technology and new designs (Ng’ethe, & Ndua, 1992). Thus, masters in the various trades pass on their skills and knowledge to apprentices but rarely create new knowledge.
There are no formal instructions. This limits the theoretical base of apprentices and could impact negatively on the quality of training received by apprentices. This would in turn affect the quality of production and services in the informal sector.

Human resource development is very important in the automobile industry. “Development represents efforts to improve employees’ ability to handle a variety of assignments and to cultivate capabilities beyond those required by the current job” (Mathis et. al., 2004). In today’s knowledge driven and competitive global technology, human resource development is a basic factor that would allow individuals and society to unlock their potential, expand their knowledge and adapt to changes in the dynamic world. It is clear that the informal sector is faced with problems related to the fast technological world and little effort is made to address the problem. This is the gap in the development of human resource in the informal sector which this study attempts to investigate by looking at the uniformity in training in this sector. For example if new vehicles are manufactured every year and yet the human resource development is lagging behind then Ghana would be faced with unemployment and the lack of experts mechanics of some particular vehicles. This implies that experts would have to come from foreign countries to work on such vehicles.

The development for apprentices is therefore very necessary for Ghana in order to have the needed human resource capabilities for future growth and change. Many informal trades are lacking skilled human resource that would be able to deal with the swift global technological changes. A carburetor specialist of the past is no more in automobile trade because most vehicles have moved to the use of injectors.

Apprenticeship training progresses in phases. Most apprentices in woodwork, hairdressing, tailoring and the like start with an introductory phase during which the novice is taught and made to do menial jobs such as cleaning the workshop or running errands. The next phase consists of getting to know all tools of the trade and as appropriate, the materials, ingredients and spare parts. “The apprentice is expected to observe and learn the work. Therefore the apprentice does his/her learning by trial and error. The apprentice is introduced to complex tasks and given increased responsibilities” (Donkor, 2009). Thus skills, knowledge and attitudes are transmitted.
through observation, imitation and on-the-job training. This indicates that any wrong information or practice can be passed on from generation to generation and eventually grinding difficulty of customer satisfaction thus worsening the already poor unemployment situation.

This study is therefore designed to identify the outcome of non-uniformity of training in the apprenticeship training and human resource development in automobile industry within the Tamale Metropolis and how far the training contributes to human resource development in Tamale Metropolis.

1.1 Statement of the Problem
Apprenticeship, as offered in the formal and informal industry, is mainly by private initiative, although some state institutions offer limited apprenticeship scheme (Education Reform Review Committee, 2002). Some characteristic of apprentice training in Ghana are the lack of uniformity in training content, duration and certification. These weaknesses in the training system are what this study attempts to investigate focusing on how they contribute to human resource development within Tamale Metropolis.

It is clear that the non existence of curriculum means training needs, the examination modalities and certification are not spelt out. Apprentices may have been cheated over the years during training periods because most of them could be staying with their trainers more years than the training may demand. For example drivers who learn driving through apprenticeship system do so for a long period of time under very unfavourable conditions. They are mostly called ‘driver mates’ in Ghana and they collect monies from passengers and serve their masters for as long as their masters want. Similarly other apprentices in other areas may over stay for years. But well established driving schools monitored by Driver Vehicle Licensing Authority (DVLA) do so at a maximum of six weeks.
In spite of this long stay with their masters, many are those who are unable to deliver the expert quality service.

Therefore areas investigated in this study are training requirements and content, specifically;

1) Existing training content and methods of transmission of knowledge in relation to the demands of technological changes.
2) Examination and certification.
3) Continuity into the formal sector - government technical and vocational institution.

1.2 Aims and Objectives

**General objective**
The general objective is to find out how apprenticeship in the automobile industry contributes to human resource development in the Tamale Metropolis.

**Specific Objectives**
1) To identify and describe how apprenticeship training is done, the training content and duration of training.
2) To determine the relationship between skills training and trade unions and human resource development.
3) To determine the role of certification in such training skills.

1.3 Purpose of the Study

In the White paper report on education reform review, the government of Ghana decided to partner the private sector in a more systematic way to promote apprenticeship programmes including assuming full responsibility for the first year of the apprenticeship programmes (ibid). Government has also decided to formalize community-based apprentice training schemes in all the districts to cater for the youth (Ministry of Educations Youth and Sports, 2004). None of the above has had the anticipated results. Several reasons could account for the lack of implementation. One critical issue that stands out clearly and needs to be addressed is the issue of non-uniformity and the type of technology used for training in the automobile industry. The findings would serve as useful information for policy formulation in the areas of uniformity in
training content, duration technological gap and certification in the industry. The purpose of the study is therefore to understand how training is done in the sector and suggest ways to improving it for human resource development.

1.4 Significance of the Study
Studies conducted so far such as enhancing apprenticeship training in Ghana through distance learning, apprenticeship training in Volta Region, World Bank reports, Government of Ghana’s policy on Technical and Vocational Education and Training (NACVET), Ghana Poverty and Eradication Strategy (GPES, 2005) have only a general overview of the existing constraints in the automobile industry. The existing technological knowhow and the inadequacies of the people would enable both government and define first use NGOs to know the training needs and direct their support appropriately.

The Minister for roads and highways on May 29th, 2009 and July 15th, 2009 respectively outlined policies and strategies to develop human resources and apprenticeship training in the country. One of the items in the Ministers presentation was to draw an adequate curriculum for the training. This study could be useful to the ministry since the study could reveal critical issues in this industry for human resource development. The study would therefore serve as a guide for the identification of training needs.

1.5 Delimitation
The study would cover only the automobile industry but will take all fields into consideration: body works and spraying, engine maintenance, vulcanizing and auto electrical. The study would be confined to Tamale Metropolis only.

1.6 Limitations
Most apprentices could not speak English Language so interpreters were used. Time was another major constraint. It was difficult to get some of the respondents because of their schedules. Conclusions of the study are limited to only the Tamale Metropolis.
Lack of adequate electronic recording equipment limited the interview records. Some of the interviewees for example principals had so many people waiting to see them so there was always limited time allocated for interview. The study is limited in drawing conclusion as in broader terms because the study covered only Tamale Metropolis.

1.7 The Scope and Organization of the Study
Chapter one of the study consist of the introduction, the problem statement and objectives of the study as well as the significance of the study. The study is confined to Automobile Engineering apprenticeship training in the private sector in Tamale Metropolis.

The second chapter is a review of related literature. This is a compilation of detailed related research work that has been done in this and other related fields.

The third chapter discusses the methodology of the research. The fourth chapter is on the presentation and analysis of data and the fifth and last chapter draws conclusions and recommendations on the study.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction
This chapter reviews literature on the history of apprenticeship, apprenticeship training in Germany, apprenticeship in the United Kingdom, Nigerian Indigenous apprenticeship, apprenticeship training in Ghana, Ghana government's position on apprenticeship, technical and vocational education curriculum, government's new vision for technical and vocational training developing, human resource and related literature. The chapter also outlined the work of an auto mechanic.

2.1 Brief History of Apprenticeship
History has it that the system of apprenticeship first developed in the later middle ages and came to be supervised by craft guilds and town governments. A master craftsman was entitled to employ young people as an inexpensive form of labour in exchange for providing formal training in the craft. Most apprentices were males, but female apprentices were found in a number of crafts associated with embroidery, silk-weaving, sewing and cooking. Apprentices were young (usually about ten to fifteen years of age) and would live in the master craftsman’s household. Most apprentices aspired to become master craftsmen themselves on completion of their contract usually a term of seven years (www.en.wikipedia.org).

There had been an immense transformation over the years in apprenticeship. Most apprentices do no longer stay with their master craftsmen/women but come from their own homes. The number has increased so much that many young people are found in the private sector therefore policy makers in both the industrialized and developing countries, as well as international donors, have been showing increased interest in the informal sector. (Simon and Kenneth, 1997). According to the authors, this is due to the realization that the formal sector has not been expanding as expected to provide employment for the youth. “In some African Countries, the formal sector is experiencing shrinkage due largely to the effects of structural adjustment programmes, restrictions imposed on economic growth by debts and burdens, low knowledge of science and technology in Africa and the reliance on agro-based exports”.

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But in Ghana, information gathered indicated that in the olden days apprenticeship was mostly practiced by families. A father or mother who had skills in either sewing, blacksmithing, meat processing passes on that family skills through apprenticeship to other family members. Some skills in the rural communities were not done for money. For example barbering was done free of charge. When apprenticeship started by the involvement of other people apart from family members, interested person had to leave their homes to live with their masters until the time their masters pass them out. At that time, an apprentice would have to work for the master on his/her farms and does any other work in the house. The most common trades practiced at that time were tailoring, blacksmithing, carpentry and masonry. Farming, barbering, catering were not considered as trades that would generate income. It was gathered that the Dagombas who are the most dominant tribe in Tamale Metropolis have three major trades which are metal works, meat processors and drumming. The metal work involves blacksmithing (producing of sheets products e.g. Buckets, cups etc). Choosing of trades therefore is influenced by cultural norms. Even if you are the most skillful person in metal work, so long as you come from a home that process meat you would not be permitted to practice metal work. But for now apprenticeship is regarded as a source of skills acquisition for school drop outs, illiterates and those who could not pursue their education due to financial problems.

2.2 An Auto Mechanic
An auto mechanic is a mechanic who specializes in automobile maintenance, repair, and sometimes modification. An auto mechanic may be knowledgeable in working on all parts of a variety of car makes or may specialize either in a specific area or in a specific make of car. In repairing cars, key roles are to diagnose the problem accurately and quickly. The mechanic uses both electronic means of gathering data as well as their senses. Their job may involve the repair of a specific part or the replacement of one or more parts as assemblies (http://en.wikipedia.org/auto mechanic). They are also involved in determining the cost of their services. Basic vehicle maintenance is a fundamental part of a mechanic’s work in some countries, while in others they are consulted only when a vehicle is already showing signs of malfunction. Preventative maintenance is also a fundamental part of a mechanic’s job, but this is not possible in the case of vehicles that are not regularly maintained by a mechanic.
With the rapid advancement in technology, the mechanic's job has evolved from being purely mechanical to include auto electronic technology. Because vehicles today possess complex computer and electronic systems, mechanics need to have a broader base of knowledge than in the past. Lately, the term “auto mechanic” is being used less and less frequently and is being replaced by the euphemistic title “automotive service technician”.

Due to the increasingly labyrinthine nature of the technology, that is now incorporated into automobiles, most automobile dealerships now provide sophisticated diagnostic computers to each technician, without which they may not be able to diagnose or repair electronic issues in modem vehicles. There are things that mechanics can still do without the use of scanners etc but manufacturers are incorporating more and more electronics into all systems. This is a challenge to those who may not have access to these modem systems.

2.2.1 Other Related Careers of an Auto Mechanic

Although the study is not concerned with other related careers but it would be to the benefit of the study to explain areas an auto-mechanic can be found. A mechanic may opt to engage in other careers related to his field. Teaching of automotive trade courses for example, is almost entirely carried out by qualified mechanics in many countries. There are several other trade qualifications for working on motor vehicles, including panel beater, spray painter, body builder and motorcycle mechanic. In some countries, these are separate trade courses, but a qualified tradesman from one can change to working as another. This usually requires that they work under another tradesman in much the same way as an apprentice.

Auto body repair involves less work with oily and greasy parts of vehicles, but involves exposure to particulate dust from sanding bodywork and potentially toxic chemical fumes from paint and related products. Salespeople and dealers often also need to acquire an in-depth knowledge of cars, and some mechanics are successful in these roles because of their knowledge. In a Car Dealership a mechanic may also be assigned in Parts Department as a Parts Counter Salesman because of their wide knowledge and familiarity of vehicle parts. Parts Counter Salesman facilitates selling, marketing, inventory and issuance of vehicle parts, accessories and lubricants to over the counter clients and service technicians. A mechanic may also be assigned in Tool Room as a Tool Keeper because of their expertise and knowledge about tools, gadgets to be used.
in, overhauling, diagnosing, troubleshooting, testing the vehicles mechanical, electrical and electronic trouble. A mechanic may also be promoted as a Service Advisor assigned in service reception entertaining walk-in or by appointment customers who wish their vehicle to be diagnosed, perform quality service check-up and estimate cost of damage.

Consultancy is another possibility a mechanic may also play a role as a consultant of automotive shop owners and engage in Sales as a Technical Sales Representative selling automotive hardware like tools, screw, chemicals and other engineering and industrial product. A mechanic may also venture into business as entrepreneur putting up his own automotive service center/shop or auto supply and accessories since she already has a wide knowledge of day to day operations of a service center and already builds a network of customers and parts supplier.

A mechanic may also be a sales or service trainer in a car dealership teaching basic automotive fundamentals in sales or service department because of their knowledge about principles and function of every parts, accessories and latest specification of the vehicle. There is a segment of auto repair that is getting very popular.

There are many regular mechanics that are opting to instead of opening an expensive regular shop they go with the less expensive mobile shop route. There are still overhead expenses but they are less. But also the amount of cars fixed per week is less too. The convenience of a mobile mechanic should make them more expensive but usually they aren't.

2.3 Apprenticeship Training
2.3.1 Apprenticeship Training in Germany
This section on apprenticeship in Germany is mainly from Wikipedia and other sources are referenced at the end of the paragraph concerned. Apprenticeships are part of Germany’s dual education system, and as such form an integral part of many people’s working life. Finding employment without having completed an apprenticeship is almost impossible. For some particular technical university, professions such as food technology, a completed apprenticeship
is often recommended; for some, such as marine engineering it may even be mandatory (www.en.wikipedia.org.)

In Germany, there are 342 recognized trades (Ausbildungsberufe) where an apprenticeship can be completed. They include for example doctor’s assistant, banker, dispensing optician, plumber or oven builder. The dual system means that apprentices spend about 50-70% of their time in companies and the rest in formal education. Depending on the profession, they may work for three to four days a week in the company and then spend one or two days at a vocational school (Berufsschule). This is usually the case for trade and craftspeople. For other professions, usually which require more theoretical learning, the working and school times take place blockwise e.g. In a 12-18 weeks interval. These Berufsschulen have been part of the education system since the 19th century.

In 1969, a law (the Berufsbildungsgesetz) was passed which regulated and unified the vocational g system and codified the shared responsibility of the state, the unions, associations and the chambers of trade and industry. The dual system was successful in both parts of the divided Germany. In the GDR, three quarters of the working population had completed apprenticeships.

2.3.2 Skills acquisition and employment
The precise skills and theory taught on German apprenticeships are strictly regulated. The employer is responsible for the entire education programme. Apprentices obtain a special apprenticeship contract until the end of the education programme. During the programme it is not allowed to assign the apprentice to a regularly employment and he is protected from dismissal until the programme ends. The defined content and skill set of the apprentice profession must be fully provided and taught by the employer. The time taken is also regulated. Each profession takes a different time, usually between 2 years and 3 years (Andreas, 2006).

2.3.3 Trade and Craft Professions
The rules and regulations for the trade and crafts work apprentices such as mechanics, bakers, joiners, etc. are as strict as even broader than for the business professions. The involved
procedures, titles and traditions still strongly reflect the medieval origin of the system. Here, the average duration is about three years some specialized crafts even take up to three and half years.

After completion of the dual education, the apprentice can train to be a master e.g. an auto mechanic is allowed to call himself a mechanic journeyman (Backereigeselle). After the apprenticeship the journeyman can enter the master’s school (Meisterschule) and continue his education at evening courses for three to four years or full-time for about one year. The graduation from the master’s school leads to the title of a master craftsman (Meister) of his profession, so e.g. A bakery master is entitled as Backermeister. A master is officially entered in the local trade register.

The German apprenticeship system is formalized and there is some form of continuity of education at whatever level an apprentice find himself or herself. The apprenticeship system is monitored and controlled by a government body so no trainer does whatever pleases him or her. The training content, duration and certification is uniform. The apprentice system is part of the educational system and not for educational dropouts and therefore nobody in the country would be intimidated of being a school dropout. However most Germans do not see any reason why after going through a formal education you need to be an apprentice before one can secure a job (Andreas, 2006).

2.4 Apprenticeship in the United Kingdom

Apprenticeships have a long tradition in the United Kingdom dating back to around the 12th century and flourishing by the 14th century. The parents or guardians of a minor would agree with a Guild’s Master craftsman the conditions for an apprenticeship which would bind the minor for 5-9 years. They would pay a premium to the craftsman and the contract would be recorded in an indenture in 1563, the Statute of Artificers and Apprentices was passed to regulate and protect the apprenticeship system, forbidding anyone from practicing a trade or craft without first serving a 7-year period as an apprentice to a master (Richard, 2005).

(Richard, 2005), continues to say that from the year 1601, ‘parish’ apprenticeships under the Elizabethan Poor Law came to be used as a way of providing for poor, illegitimate and orphaned
children of both sexes alongside the regular system of skilled apprenticeships, which tended to provide for boys from slightly more affluent backgrounds. These parish apprenticeships, which could be created with the assent of two Justices of the Peace, supplied apprentices for occupations of lower status such as farm labouring, brickmaking and menial household service.

According to the same author, in the early years of the Industrial Revolution entrepreneurs began to resist the restrictions of the apprenticeship system, and a legal ruling established that the Statute of Apprentices did not apply to trades that were not in existence when it was passed in 1563, thus excluding many new 18th century industries.

In modern times, apprenticeship became less important, especially as employment in heavy industry and artisan trades declined. Traditional apprenticeships reached their lowest point in the 1970s: by that time, training programmes were rare and people who were apprentices learned mainly by example. In 1986, National Vocational Qualifications (NVQs) were introduced, in an attempt to revitalise vocational training. By 1990, apprenticeship took up only two-thirds of one percent of total employment.

In 1994, the Government introduced Modern Apprenticeships based on frameworks that are now devised by Sector Skills Councils. Apprenticeship frameworks contain a number of separately-certified elements:

1) a knowledge-based element, typically certified through a qualification known as a ‘Technical Certificate’ (this component is not mandatory in the Scottish Modern Apprenticeship);

2) a competence-based element, typically certified through an NVQ.

In Scotland, Modern Apprenticeship Frameworks are approved by the Modern Apprenticeship Group (MAG) and it, with the support of the Scottish Government, has determined that from January 2010, all Frameworks submitted to it for approval, must have the mandatory elements credit rated for the Scottish Credit and Qualifications Framework (SCQF) (Langford, 1984).

By 2009 there are over 180 apprenticeship frameworks. Unlike traditional apprenticeships, the scheme extends beyond craft and skilled trades to parts of the service sector with no
apprenticeship tradition. The Department for Children, Schools and Families has stated its intention to make apprenticeships a “mainstream” part of England’s education system. (www.notgoingtouni.co.uk/advice/apprentice).

Employers who offer apprenticeship places have an employment contract with their apprentices, but off-the-job training and assessment is wholly funded by the state for apprentices aged between 16 and 18. In England, Government only contributes 50% of the cost of training for apprentices aged 19 and over.

Government funding agencies (in England, the Learning and Skills Council) contract with ‘learning providers’ to deliver apprenticeships, and may accredit them as a Centre of Vocational Excellence or National Skills Academy. These organisations provide off-the-job tuition and manage the bureaucratic workload associated with the apprenticeships. Providers are usually private training companies but might also be Further Education colleges, voluntary sector organisations, Chambers of Commerce or employers themselves (Langford, 1984).

2.4.1 Apprenticeship Training for Auto Mechanics in UK

In the UK the mechanic or technician is trained to diagnose and repair the entire vehicle, in other countries they have specialist “shops” (for example wheels and tyres, or brakes) but in the UK the mechanic repairs all of these systems. A mechanic can start his/her education at the age of 14 years with the new Diploma and then progresses until level three certificates are obtained. This is done usually on an apprenticeship scheme with the first level been the foundation apprenticeship Where apprentice must achieve a level II technical certificate (the understanding) and a level II National Vocational Qualification (NVQ) (the practical part of the job) this is assessed by a competent, qualified assessor. An Apprentice then progresses to the advanced apprenticeship are set at level III. The mechanic will then tend to be given easy jobs to build up experience over a period of time. Once the mechanic has achieved level III they can apply to be Auto Technician Accreditation (ATA) tested, this is a scheme similar to the Association for Science Education (ASE) scheme where they are assessed and registered for 5 years as certified, then after 5 years they renew this registration by completing a set of practical and theory tests, the idea behind this scheme is to eliminate poor practice.
2.5 Nigerian Indigenous Apprenticeship

In Nigeria, apprenticeship has been an age-long method used in training young people in trades and crafts, agriculture, business, and catering. During the pre-colonial days, apprenticeship was the mode of training. It is a common feature of the traditional setting to see people engage in a vocation such as farming, fishing, hunting, carving, carpentry, sculpting, painting, building, decorating, smithing, catering, boat-making, mat-making, dyeing and so on. ‘The apprenticeship system was an institution that was jealously guarded by customs, lineage and rituals. Every male born into a family was expected to learn his patrilineal craft, and it was easy to identify a young male child as a member of a lineage found to be proficient in the lineage craft (Ekwelem, 2000).

During the colonial era, although the interest of the missionaries was the evangelization of the African, attempts were made by some missionaries to provide skills training. However, (Fafunwa, 1974) noted that “some of the mission schools included bricklaying, farming and carpentry as part of their curriculum, but these skills were not seriously regarded by pupils and parents as an integral part of western education”.
accreditation for roadside mechanics and others who complete training programmes through non-formal education will be undertaken by the National Board for Technical Education (NBTE)”, government has not accredited any roadside workshop for such training for almost twenty years, since the policy was promulgated. This has left much to be desired in roadside apprenticeship, hence this study to investigate the methods used by roadside apprenticeship in training. However, roadside apprenticeship has contributed immensely to the growth of the Nigerian economy. The informal vocational training system has been serving as an indispensable complement since enormous demands have been placed on it.

Federal Ministry (1981), reports that roadside small-scale enterprises have provided opportunities for training young apprentices in Nigeria. In most urban areas, roadside workshops such as tailoring institutes and mechanics’ workshops are common sites in every street. The numerous indigenous small-scale establishments in urban cities are due to rural-urban migration of young people looking for employment believed to be in abundance in urban areas. Such unrealistic beliefs soon come to light, as the government establishments are unable to absorb the migrants. The young migrants soon find it convenient to attach themselves to apprenticeship workshops to acquire skills. Realizing the contributions of these roadside small-scale enterprises to the national economy, and the needs of the young school leavers being trained in these set-ups, the

Federal Republic of Nigeria (1981) envisaged that these roadside apprenticeship centres would be accredited for training by the National Board for Technical Education (NBTE): a policy that has never seen the light of the day. Problems relating to implementing the policy include the following:

1. The educational level of master-craftsman and journeymen is very low. In fact the majority of them are primary school-leaving certificate holders.
2. Most workshops do not have the required tools and machines. They are able to carry out repairs due to adaptations to tools and machinery.
3. The rudiments of teaching are essentially lacking in these master-craftsmen (Fanfuwa 1974).

In order to provide relevant practical vocational training, the Industrial Training Fund (ITF) in consultation with other bodies envisaged setting up a National Apprenticeship Scheme. It was
envisaged under this scheme that vocational training centres would be established to provide a base and skill up-grading training for both minors (14 years) and employed adults (Federal Ministry, 1981).

2.6 Apprenticeship Training for Auto Mechanics in USA

In the United States, community colleges and private car training schools offer training for those interested in pursuing competencies as an automotive mechanic/technician. High schools may have programs also. A few of the aspects usually taught those studying for this career are: power train repair and diagnosis, emissions, and suspension. Courses can include engine repair, electrical systems, brake systems, manual and automatic transmissions, suspension and steering, heating and air conditioning, basic fuel and ignition systems, and emissions. The National Automotive Technicians Education Foundation (NATEF) is responsible for evaluating technician training programs against standards developed by the automotive industry. NATEF certifies programs in four different categories: automotive, auto body, trucks (diesel technology) and alternative fuels (US Department of labour Handbook, 2010-2011).

An auto-mechanic in this system of training is being monitored and programmes are evaluated according to technological changes. The training is geared towards some specialization of the vehicle and it is ensured that the apprentice is well trained before practicing the trade. A professional body needs to certify the qualification of an apprentice before he/she goes out to practice.

2.7 Technical and Vocational Education

Vocational Education and Training (VET) prepares trainees for jobs that are based on manual or practical activities, traditionally non-academic, and totally related to a specific trade, occupation, or vocation. It is sometimes referred to as technical education as the trainee directly develops expertise in a particular group of techniques or technology.

Vocational education may be classified as teaching procedural knowledge. This can be contrasted with declarative knowledge, as used in education in a usually broader scientific field, which might concentrate on theory and abstract conceptual knowledge, characteristic of tertiary
education. Vocational education can be at the secondary or post-secondary level and can interact with the apprenticeship system. Increasingly, vocational education can be recognised in terms of recognition of prior learning and partial academic credit towards tertiary education (e.g., at a university) as credit; however, it is rarely considered in its own form to fall under the traditional definition of higher education (Dewey, 1915).

Up until now, vocational education has focused on specific trades such as, for example, those of automobile mechanic or welder, and it was associated with the activities of lower social classes. As a consequence, it carries some social stigma. Vocational education is still seen to be related to the age-old apprenticeship system of learning.

However, as the labor market becomes more specialized and economies demand higher levels of skill, governments and businesses are increasingly investing in the future of vocational education through publicly funded training organizations and subsidized apprenticeship or traineeship initiatives for businesses.

2.7.1 Technical Education Curriculum

Recent development in science and technology has had profound effects on industry and commerce. Due to this, there is the need to learn new skills and acquire new knowledge in order to remain in employment. This has brought pressure on to curriculum design, development, implementation and evaluation. In view of the rapid technological changes occurring at the present time, technical/vocational education curricula must be kept up-to-date so that the information being taught is current, accurate and represent the best knowledge that anybody should be learning. The overriding objective of the technical/vocational education teacher should be to bring about an organized improvement in the quality of teaching and learning. This objective would enable the teachers to unlock the doors which are otherwise closed to learners from schooling to workplace (Owusu-Asamoah, 1992).

Attempts to define the curriculum by various authors in different countries and cultures, and at different times have almost always run into difficulties. United Nations Education Scientific and
Cultural Organisation (UNESCO, 1983) described “the technical/vocational education curriculum which is to unlocking doors which are otherwise closed to the students in transition from schooling to the work place”. The implication here is that there are many people (students and unemployed) who are looking for jobs. The function of the technical and vocational education is to train the people without jobs to do the jobs. UNESCO thinks that the key to unlock the door between the unemployed and the jobs is the technical/vocational education curriculum. This key is believed to be in the hands of well trained and educated technical/vocational education teachers.

2.8 Apprenticeship Training in Ghana

2.8.1 Introduction

Apprenticeship in Ghana has been an age-long method used in training young people in trades and crafts, agriculture, business, and catering. During the pre-colonial days, apprenticeship was the mode of training in skills acquisition. It was a common feature of the traditional setting to see people engage in a vocation such as farming, fishing, hunting, carving, carpentry, sculpting, painting, building, decorating, blacksmithing, catering, boat-making, mat-making, dyeing and so on. The apprenticeship system was an institution that was guarded strictly by customs, lineage and rituals.

Every male born into a family was expected to learn his patrilineal craft and women were not allowed to learn the trade because it was believed that a woman is not part of the family since she would go out to marry, and it was easy to identify a young male child as a member of a lineage found to be proficient in the lineage craft. Some trades like herbal medicine were kept secret and only the most loved among the family was taught the healing processes. It was strictly by family lineage and through this practice most people died with very good herbal medicines because their children at the time they died were not matured to learn.

In Ghana before independence there were various automobile firms for example UTC motors, African motors, GNTC motors and R.T. Briscoe who were engaged in servicing and sales of vehicles. These firms engaged young people between the ages of 20-25 years for apprenticeship training.
After independence before one enter apprenticeship training in any automobile firm, you must complete a 4 year technical education in a government technical institute. The apprenticeship training was used as practical training. This system collapsed when during the Provisional National Defence Council (PNDC) regime, the government in attempting to regulate the types of cars to be used in the country, rendered these automobile companies jobless. So most of them left the country. The system therefore collapsed and those who have gone through the training established their own workshop and started apprenticeship training. The previous system engaged apprentices to specialize in a specific area of automobile either engine or chassis, electrical or vulcanizing. But for these days the training is no more into any direct specialization. This was indicated by the Head of Department of Automobile Engineering at Daboka Senior High school during the interview.

Many young people are now engaged in apprenticeship training in the informal or private sector in Ghana. Virtually all apprentices and masters lack formal vocational or technical training. The data shown in 2000 indicated that informal apprenticeship sector contributed over 70% of self employed among the over 70 million labour force (Donkor, 2009).

Modalities regarding apprenticeship in the informal sector vary. Entry requirements, if any exist, are generally low and not restricted by age, ethnicity or proof of literacy (ILO, 1988). Depending on the trade, the master and the apprentice, apprenticeship may take from months to years. Working hours of apprentices are usually long, typically six days a week with weekly working hours ranging from 50 to 60. “Some apprentices pay for their training while others forego income for the work they do. In some instances, they receive free boarding and lodging or some pocket money or occasional bonus. In some rare cases, apprentices are permitted to sell what they produce in their spare time with the materials and the equipment they find in the workshop” (ILO, 1988).

Apprenticeship training progresses in phases. Most apprentices start with an introductory phase during which the novice is taught and made to do menial jobs such as cleaning the workshop or running errands. The next phase consists of getting to know all tools of the trade and, as
appropriate, the materials, the ingredients and the spare parts. Meanwhile, the apprentice is expected to observe and learn about the work. The master occasionally demonstrates a particular operation or directs an apprentice whose trials usually end in an error. Gradually the apprentice is introduced to more complex tasks and given increased responsibility such as supervising other apprentices, dealing directly with customers, and from time to time, looking after the shop in the absence of the master (Abban & Quarshie, 1993). Thus, skills, knowledge and attitudes are transmitted through observation, imitation and on-the-job experience.

2.9 Ghana Government’s Position on Apprenticeship

2.9.1 Skills and Entrepreneurial Development

Skill and entrepreneurial gaps are evident in the labour market in Ghana, given the constraints with school enrolment, quality and relevance. This has mainly been due to the problems of implementation of a national policy framework for a co-ordinated Technical and Vocational Education and Training (TVET) system for Ghana.

Young people within the ages of 15-25 years require support most in this regard. Some of these people are barely literate due to early drop out or inability to attend school and others are those who have completed formal education but are unemployed due to reasons of quality/relevance of education. Another group comprises young people who think they have acquired some skills yet need retraining especially in good management practices to succeed in the labour market.

The Ministry of Manpower, Development and Employment, and the support of the Ministry of Education, Youth and Sports, takes up the development of skills and entrepreneurial development programme. The programme will combine both formal and traditional forms of skill acquisition with a strong focus on entrepreneurial development. Institutions for skills training will be encouraged to operate production units to provide trainees with practical experience and also provide those institutions with additional sources of revenue.

The skills and entrepreneurial development programme will be guided by the following priorities of the Ghana Poverty Reduction Strategy (GPRS):

- Increasing the relevance and coverage of vocational and technical training.
- Developing and expanding the traditional apprenticeship system.

2.9.2 Relevance and Coverage of Vocational and Technical Training (Government’s position)

Keeping up with technology and improving relevance are key to expanding vocational and technical training. Government will provide support for the development of policy to stimulate and regulate vocational and technical and for the revision of the curriculum of vocational and technical schools to increase their relevance to the labour market, particularly in relation to farm management, construction techniques and entrepreneurship.

Private and non-governmental organizations will also be supported to strengthen their leadership in direct service provision. In this regard, public-private partnerships will be established in the management of existing state vocational and technical schools. Formal vocational and technical training will be improved to support in particular, young people who have completed basic and secondary education but are unemployed (GPRS, 2003-2005).

Existing social investment projects will be adapted to provide matching grants for vocational and technical education programmes that are supported by non-governmental organizations and community groups.

2.9.3 Establishing Community-based Vocational Apprenticeship

Community-based apprenticeship will target young people who are barely literate. Government will provide grants through ongoing programmes to enable such young people acquire skills within their districts. Farm management and food processing apprenticeship schemes on successful commercial farms and agro processing units will be priorities in rural districts. Supports will be provided to master craftsmen in technology upgrading training as well as advice on micro finance opportunities. Ghana Poverty Reduction Strategy (GPRS, 2003-2005).
To conclude, government’s position on apprenticeship training indicates recognition of an improvement of the private sector that have been neglected for many years. This would be an improvement of an already existing traditional apprenticeship system especially in the communities. Government institutions would now monitor the apprenticeship system and ensure that there is no variation or non-uniformity in the training content, duration and certification.

2.10 Ghana Government’s New Vision for Technical and Vocational Education Training

2.10.1 New Mission for Technical Vocational Education Training (TVET)

The new vision of Ghana Government on TVET is to improve productivity and competitiveness of the skilled workforce and to raise the income-earning capacities of people, especially women and low income groups, through the provision of quality-oriented, industry-focused and competency-based training programmes and complementary services.

2.10.3 Goals of TVET

1) Create a flexible and responsive human resource supply system.
2) Produce high quality skilled workforce to make Ghana’s industry more competitive locally and globally.
3) Increase income-earning capacities of vulnerable groups.
4) Contribute to the maintenance of economic and political stability.
5) Contribute to increased foreign exchange through export of surplus skilled labour.

2.10.4 New Vision on Apprenticeship

Government’s new vision on apprenticeship is summarized as follows:
Establish a National Apprentice Training Board (NTAB) under Council for Technical and Vocational Education Training (COTVET) to oversee and regulate apprentice training and handle issues concerning registration, content, duration and certification.

1) Formalize community-based apprentice training schemes in all districts to cater for the youth.
2) Support institutions such as the regional technology transfer centres and Ghana Regional Appropriate Technology Industrial Service (GRATIS), Integrated Community Centres For Employable Skills (ICCES,) Opportunities Industrialization Centres (OIC), Youth Leadership Institutes, the private sector and other organizations including NGO to increase capacity and expand their coverage and enrolment of apprentices.

3) NTAB will conduct mapping, identification, registering and training of trade association/enterprises and institutions for apprentice training.

4) NTAB through the community-based apprentice training schemes will ensure the placement of trainees.

2.11 Developing Human Resource

Since the study is about apprenticeship and human resource development, this section looks at what this is and the necessity to have competent human resource. Human resource is a term used to describe the individuals who comprise the workforce of an organization, although it is also applied in labour economics to, for example, business sectors or even whole nations. Human resource is also the name of the function within an organization charged with the overall responsibility for implementing strategies and policies relating to the management of individuals (i.e. the human resources). National as well as multinational or, international corporations, reflecting the adoption of a more quantitative as well as strategic approach to workforce management, demanded by corporate management to gain a competitive advantage, utilizing limited skilled and highly skilled workers (Mathis et al., 2004).

Human Resources Development is a framework for the expansion of human capital within an organization or (in new approaches) a municipality, region, or nation. Human Resources Development is a combination of training and education, in a broader context of adequate health and employment policies that ensures the continual improvement and growth of both the individual, the organization, and the national human resourcefulness. Human Resources Development is the medium that drives the process between training and learning in a broadly fostering environment. Human Resources Development is not a defined object, but a series of organised processes, “with a specific learning objective” (Nadler, 1984). Within a national
Human Resource Development is the structure that allows for individual development, potentially satisfying the organizations, or the nation’s goals. Development of the individual benefits the individual, the organization and the nation and its citizens. In the corporate vision, the Human Resource Development framework views employees as an asset to the enterprise, whose value is enhanced by development, “Its primary focus is on growth and employee development. It emphasises developing individual potential and skills” (Elwood et al., 1996). Human Resources Development in this treatment can be in-room group training, tertiary or vocational courses or mentoring and coaching by senior employees with the aim for a desired outcome that develops the individual’s performance. At the level of a national strategy, it can be a broad intersectoral approach to fostering creative contributions to national productivity (Mathis et al., 2004).

At the organizational level, a successful Human Resources Development program prepares the individual to undertake a higher level of work, “organized learning over a given period of time, to provide the possibility of performance change” (Nadler, 1984). In these settings, Human Resources Development is the framework that focuses on the organizations competencies at the first stage, training, and then developing the employee, through education, to satisfy the organizations long-term needs and the individuals’ career goals and employee value to their present and future employers. Human Resources Development can be defined simply as developing the most important section of any business, its human resource, by attaining or upgrading employee skills and attitudes at all levels to maximise enterprise effectiveness (Kelly, 2001).

The people within an organization or a country are its human resource. Human Resources Development from a business perspective is not entirely focused on the individual’s growth and development, “development occurs to enhance the organization’s value, not solely for individual improvement. Individual education and development is a tool and a means to an end, not the end goal itself” (Elwood, Holton, James and Trott, 1996). The broader concept of national and more
strategic attention to the development of human resources is beginning to emerge as newly independent countries face strong competition for their skilled professionals and the accompanying brain-drain they experience.

The competitive pressures facing organizations today require employees whose knowledge and ideas are current, and whose skills and abilities can deliver results. As organizations compete and change, training becomes even more critical than before. Employees who must adapt to the myriad of changes facing organizations must be trained continually in order to maintain and update their capabilities (Landauer, 2004).

Development represents efforts to improve employees’ ability to handle a variety of assignments and to cultivate capabilities beyond those required by the current job. Development benefits both organizations and individuals. Employees and managers with appropriate experiences and abilities may enhance organizational competitiveness and the ability to adapt to a changing environment. In the development process, individuals’ careers also may evolve and gain new or different focus (Mathis et al, 2004).

Development differs from training. It is possible to train most people to run a copy machine, answer customer service questions, drive a truck, operate a computer, or assemble a radio. However, development in areas such as judgment, responsibility, decision making, and communications presents a bigger challenge.

2.11.1 Lifelong Learning

Learning and development are not one-time occurrences. For most people, lifelong learning and development are much more likely and desirable. For many professionals, lifelong learning may mean continuing education requirements to keep certified. For example, lawyers, teachers, dentists, and others must complete continuing education requirements in most states to keep their licenses to practice. For semi-skilled employees, learning and development may involve training to expand existing skills and prepare for different jobs, promotions, or even for new jobs after retirement (Mathis et al., 2004).
Assistance from employers for needed lifelong development typically comes through programs at work, including tuition reimbursement. However, much of lifelong learning is voluntary, takes place outside work hours, and is not always formal. Although it might have no immediate relevance to a person’s current job, learning often can enhance confidence, ideas, or enthusiasm of individuals.

2.11.2 Establishing Training Objectives and Priorities

Once training needs have been identified using appropriate analyses, then training objectives and priorities must be established by identifying a gap analysis, which indicates the distance between where an organization is with its employee capabilities and where it needs to be. Training objectives and priorities are set to close the gap. Three types of training objectives can be set: Knowledge: impart cognitive information and details to trainees.

Skill: develop behaviour changes in how jobs and task requirements are performed. Attitude: create interest in and awareness of the importance of training.

The success of training should be measured in terms of the objectives set. Useful objectives are measurable. For example, an objective for a new sales clerk might be to “demonstrate the ability to explain the function of each production in the department within two weeks”. This objective serves as a check on internalization, or whether the person really learned and is able to use the training.

Because training seldom is an unlimited budget item and because organizations have multiple training needs, prioritization is necessary. Ideally, management ranks training needs based on organizational objectives. Conducting the training most needed to improve the performance of the organization will produce visible results more quickly.

2.12 Certification in Apprenticeship Training

Certification is a vital ingredient in apprenticeship training. This is normally expected to be done at the end of an apprentice training which will indicate the level of competencies of the training. Certification refers to the confirmation of certain characteristics of an object, person, or
A board is responsible for the accreditation of all apprenticeship training programs offered by private and public training institutions. Accredited apprenticeship programs ensure the learner, industry, employers and the public that the program meets or exceeds educational and industrial standards as identified in the national apprentice policy. The purpose of this policy is to ensure that those who have the desire and attributes to become qualified trades persons reach their goals by participating in quality training programs. The accreditation policy provides an auditing mechanism for apprenticeship training programs independent of the educational system. It also meets the challenges of technological changes by stimulating ongoing curriculum improvement through the process of continuous review.

Certification must be based on certain principles to be recognized as meaningful and useful. These principles include quality and currency. The assessment on which the certificate is based must be valid, reliable and fair (Forster et. al., 2006). This could be based on different types of test and one of the tests could be cognitive ability test which measures an individual thinking, memory, reasoning, and verbal abilities. Another is physical ability test which measures individual’s strength, endurance and muscular movement. The psychomotor test is often used in the testing of skill based test where a person’s dexterity, hand-eye coordination, arm-hand coordination, arm-hand steadiness are assessed (Mathis et. al., 2004).

Certification has many benefits for individuals. If it is the competency-based outcome of a career-technical program, many of which offer an opportunity to gain a certificate, the certificate gives trainees a specific goal. If it is not attached to a program, it offers flexibility in certifying competence. With a certificate obtained, trainees are reinforced and realize a sense of accomplishment. The certificate may also be transferable to credits in another program. The certificate is a professional credential, of high value in business and industry, which helps make individuals more employable. Often that means that those who hold certificates will be paid higher starting pay (Foster et. al., 2006).
Certification in apprenticeship programme should be a priority to the National Apprentice Training Board in Ghana. It would boost the morale of industries and trainees during and after the training. Employers would know the caliber of trainees they would be employing and also know their training needs.

2.13 National Vocational Training Institute (NVTI)

2.13.2 General Background
In 1967, a tripartite national manpower board comprising representative of the government, employers (industry) and workers (labour) was established in order to plan effective development and utilization of human resource in accordance with the expected socio-economic development of the country. After a comprehensive study of the country's manpower needs and the existing facilities for skill training, the board requested for assistance from the United Nations Development Programme Special Fund (UNDP/SF) to establishing a national vocational training programme. The first phase of the project which was of four years duration was approved in June 1968 with a total UNDP input of seven hundred and five thousand, four hundred dollars (705,400) and Ghana government counterpart contribution of three hundred and seventy-four thousand cedis (374,000). The UNDP input provided for 240 man-month of expertise in addition to equipment and fellowships (NVTI handbook).

The plan of operation was signed on 23\textsuperscript{14} October, 1968 and commencement of operations was authorized on 25\textsuperscript{th} October, 1968, with the international labour organization (ILO) as the executing agency and the ministry of labour, social welfare and co-operatives now ministry of manpower, youth and employment as the co-operating agency. An act of parliament 351 of 12\textsuperscript{th} January, 1970 was passed to legalize the establishment of the institute.

2.13.3 Functions
According to the act of parliament (no. 351 of 12\textsuperscript{th} January 1970) establishing the National Vocational Training Institute, it is to function as follows:

- To organize apprenticeship, in-plant training and training programmes for industrial and clerical workers and train instructors and training officers required for the purpose.
To provide for vocational guidance and career development in industry.

To develop training standards to evolve effective trade testing and certification policies and programmes.

To initiate a continuing study of the country’s manpower requirements at the skilled worker level.

To establish and maintain technical and cultural relations with international organizations and other foreign institutions engaged in activities connected with vocational training.

Subject to the provision of this act, do all such things as are conducive to the attainment of the objectives of the institute.

2.13.4 Apprenticeship Department

NVTI as an educational institution has various departments (eg administration, trade test) apprenticeship department was also established with the following functions:

1) Formulate time tested policies to guide the development and maintenance of the informal infrastructure

2) Ensure that a strong data base of master crafts persons and apprentices are in place and regularly updated.

3) Initiate and implement policies to ensure that training of master crafts persons meet world class standards and standards set by Council for Technical and Vocational Education Training (COTVET).

4) Evolve policies to assure that demand-driven competency based informal apprenticeship takes place nationwide.

5) Put in place a system to make the informal apprenticeship a master piece of NVTI’s activities.

6) Ensure that training of apprentices in the informal sub-sector is monitored in line with best practices nationwide.

7) Submit a quarterly report on the progress of apprenticeship to the director.

It has been established in this chapter that apprenticeship training in the informal sector is an aged practice. In Ghana and Africa it was mostly a traditional practice in the pre-colonial days where there was transfer of skills within families. All male children within the families were
trained to succeed their parents and trades that were practiced were weaving, blacksmithing, catering, dyeing, carving and many more. But in recent times, apprenticeship training has turned a different dimension which now involves other people from different families to learn skills. This practice has called the attention of many Governments as the engine of private sector development. In Ghana, the Government has formulated policies to improve the private sector especially establishing apprentices’ training centres in all the Regional capital towns for skills acquisition for the youth. This would go a long way to improve the economy.

2.14 Related Research

Regarding related research, three pieces of research are found directly related to this study. Breyer, (2008) for example focused on financial arrangements in informal apprenticeships in Accra. Through a survey among entrepreneurs and apprentices in micro and small enterprises in Accra, Ghana, the study analysed the financial arrangements in informal apprenticeships. It discussed the relationship between the financing of apprenticeships and the financing of enterprises in which the training takes place. It also examined the way apprentices finance apprenticeship training. The findings suggested that masters commonly charge fees for the training, either at the beginning (commitment fees) and or at the end (graduation fee) of the training. The payment of an allowance to the apprentices (chop money) is a widespread practice. Even if the amount of this allowance in the majority of cases exceeds the amount of fees paid for the training. This is because the apprentices are also considered staff who contributes to revenue generated by the workshop. Although this could serve as an incentive, mobilizing the fees are difficult for many apprentices thus serving as a block for entering and completing an apprenticeship. Finally, the paper presented potential entry points for microfinance institutions support and improve the quantity and quality of apprenticeship training, some of which are to ensure positive contribution to youth employment. This work was found useful in the study because of the entry conditions and dynamics in supporting apprentices while they are under training.

Another piece of work directly related to this study is Palmer study on policies and strategies for improving the institutional framework for informal apprenticeship training in Ghana (Palmer 2008). This work analysed some past policies by the Government that were implemented. The
institutional framework was on the establishment of some institutions that were in relation to the apprenticeship training. The National Vocational Training Institute (NVTI) for example, set up in 1970 is responsible for the nationwide coordination of all aspects of vocational training including apprenticeship. However, the main programmes of the NVTI’s Department of Apprenticeship have only targeted training of “formal” apprentices.

A National Coordinating Committee on Technical and Vocational Education and Training (NACVET) was also set up to coordinate skills training across nine different ministries. His findings show that so far it has failed to design a national policy for skills development. It suffers from capacity problems and ongoing tensions between the two parent ministries, the Ministry of Education and the Ministry, of Manpower, Youth & Employment. NACVET is currently being replaced by a Council for Technical Vocational Education Training.

The 1998 Children’s Act outlines the legislative framework for informal apprenticeship. It defines a minimum age of 15 years for apprentice to be engaged and sets out the master crafts peoples’ responsibilities, and specifies the content of apprenticeship agreements. One of the most important elements of the institutional framework for informal apprenticeship are Informal Sector Associations (ISAs). They are actively involved in the supervision of skills training. However, ISAs have been found not to be strong, effective and representative. They act as intermediaries between member enterprises and the government, but their purpose is usually political (such as the collection of taxes) rather than the provision of active support to its members. A World Bank (2008) evaluation concluded that most of the associations only existed in name and were not mobilizing local artisans.

This chapter has reviewed literature related historical planning and functional aspects of apprenticeship training and how that relates to the development of Human Resource.
CHAPTER THREE
RESEARCH METHODOLOGY

3.0 INTRODUCTION
In doing research, an appropriate methodology is required to gather the required data to meet the objectives of the research. Because of the anticipated data, this research is mainly qualitative study and will use instruments that are qualitative in nature. Some quantitative data was also collected. This chapter considered the population out of which the number of participants desired was selected, the sampling and sampling techniques used, the research site, the time period, the measuring devices and the plan of data analysis.

The general objective of the study is to find out how apprenticeship in the automobile industry contributes to Human Resource Development. In this regard the targeted population is the apprentices undergoing training in automobile engineering within the Tamale Metropolis. The study was based on qualitative and quantitative data collection in the Tamale Metropolis within a five week duration. The qualitative part of the survey involved interviews with educational authorities such as Principals and Heads of Departments, customers, Northern Regional coordinator of National Vocational Training Institute (NVTI) and other bodies like tailors and dressmakers who are also in apprenticeship training. The interview was done at the working places and an interview scheduled was provided and the interviewees were well informed before the interview date. This information served as a background for the quantitative data collection.

The quantitative data was collected through a questionnaire that was distributed to 91 apprentices in the various fields in the automobile industry within the Tamale Metropolis. Apprentices in engines and chassis answered 30 questionnaires, body works apprentices had 27, auto electrical answered 27 and vulcanizers answered 7 questionnaires. Students from the Mechanical Department from Tamale Polytechnic distributed the questionnaires. It was ensured that the five students had knowledge in data collection procedures and could speak Twi and Dagbali which the most common languages spoken in the Tamale Metropolis.
Observation being the act of recognizing and noticing facts or occurrences was also used. This data collection technique was used to cross-check some information given by the apprentices in the questionnaires for example the use of safety equipment and safety practices in the various shops, teaching and learning.

3.1 Sampling Technique

Since the study targeted a particular group of people within the Tamale Metropolis, a purposive sampling method was used. Specific groups were purposively chosen for the study. These include: auto electrical mechanics, auto engine and chassis mechanics, body works mechanics and vulcanizers. In this study three data collection techniques were used which are questionnaires, interviews and observation. Questionnaires and interviews were also designed to investigate the non-uniformity in the learning content, all with the objective of finding out why automobile mechanics in the Tamale Metropolis do not meet the challenges of today. No electronic gadget was used to record the interviews. Every data collected through any method was well checked before including the information in the study to ensure validation and reliability.

Stratified random sampling technique was used in the study. This is the process of selecting a sample in such a way that identified sub-groups in the population is represented in the sample in the same population that they exist in the population. This method was desirable in this study because the sub-groups of an automobile industry were covered. These are engine mechanics, auto-electricians, bodyworks and spraying and vulcanizing mechanics. A total population of 680 apprentices undergoing automobile training in Tamale Metropolis which comprised 224 engine mechanics (stratum A), 52 vulcanizing mechanics (stratum B), 201 auto-electrical and electronic mechanics (stratum C), and 203 bodyworks mechanics (stratum D) were considered. The study considered 13% of the population as desirable participants.

The allocation was done proportionally to ensure that each stratum in the sample is weighted by the number of element it contains.
The allocation formula is given as:

\[ n_i = \frac{nN}{N} \]

\( n_i \) = sample to be drawn from stratum \( i \)

\( N_i \) = population size for stratum \( i \)

\( N \) = total sample size drawn from all the strata

\( N \) = total population

But the total sample size drawn from all the strata (\( n \)) was determined by taking suitable sampling fraction of 13\% of total population which was considered desirable in this study.

Total population \( n = 680 \)

\( N \) proportion of \( = 13\% \)

\( n_i \) = sample size allocation to each stratum

\[ n_i = \frac{N_i \times n}{N} \]

\[ n_i = \frac{680 \times 0.13 \times 224}{680} = 29.12 \cong 30 \]

1) Stratum a population is 224

Sample size allocated in stratum A is

\[ n_i = \frac{N_i \times n}{N} \]

\[ = \frac{680 \times 0.13 \times 52}{680} = 6.76 \cong 7 \]

2) Stratum B population is 52

3) Stratum C population is 201
3.2 Data Collection

The qualitative data of the study involved interviews with key informants and stakeholders of educational institutions, Northern Regional National Vocational Training Institute coordinator, master mechanics, tailors, beauticians and customers.

More quantitative data were collected through question apprentices within Tamale Metropolis. Apprentices who could the questionnaires interpreted to them in their various local languages. The demographic data was quantitatively analysed.

Furthermore, observation in the various workshops was done more in-depth understanding of some of the emerging interviews.

To ensure sectional representation of apprentices in the city, Tamale was divided into 4 zones, namely zone 1 comprising Central Traffic lights by Ghana Standard Chartered bank towards Yendi, zone 2 comprised the Central traffic lights towards the Central traffic lights towards Lamina Barracks and zone 4 the Central traffic lights towards Lamashegu. Each interviewer was assigned to one of the 4 areas with the task of randomly surveying 10 workshops in his area. Interviews of customers, educators, tailors and beauticians were done at various workplaces within the four zones metropolis. The questions asked concentrated on age, educational background, brand of cars serviced, financial arrangement of the apprenticeship (fees demanded), areas of specialty in the automobile industry (engines, electrical, vulcanizing and bodyworks), training content, duration and certification.

The administering of the questionnaires was carried out by five graduate students of Tamale Polytechnic from the mechanical engineering department. The students were purposely chosen and trained. The questionnaires were coded to avoid missing data or information. The questionnaires of engine mechanics were coded EM-01, auto-electricians AE-02, vulcanizing mechanic VM-03, and body works and spraying forms were coded BS-04.
The data gathered were tallied on frequency tables for presentation and discussion. The interviews were written out in full and starved as material for the descriptive analyses.

3.3 Sample Selection

The study identified four types of probability sampling which were critically examined before the appropriate type was selected. Random sampling provided each apprentice an equal chance of being selected and that each choice is independent of any other choice but the conditions necessitating the use of this sampling method was not favourable in this situation. Cluster random sampling was also considered. Cluster random sampling is the process of sampling which is based on naturally occurring groups referred to as clusters. The procedure for selecting a cluster sample was also not favourable to be used in this study.

Systematic random sampling was also considered to get the target population. This system suggests itself when there is a sequence of units occurring naturally in space or time. The method could not be used in the study. Stratified random sampling is the process of selecting a sample in such a way that identified sub-groups in the population are represented in the sample in the same proportion that they exist in the population. This sampling provided a procedure where the universe is sub-divided into a number of sub-universes called strata and sampling carried out independently in each stratum. This method was favourable to the study because apprentices have sub-groups in the population. The automobile apprentices are divided into sub-electrical and electronics, engine mechanics, vulcanizing mechanics, bodyworks and mechanics. The procedure for the use of stratified sampling was used for the study. The population targeted was apprenticeship in automobile industry. Therefore various stratum identified as vulcanizing electrical and electronic, bodyworks and spraying and engines. Stratum A is engine mechanics, stratum B is vulcanizing mechanics, stratum C is and electronics and stratum D is bodyworks and spraying.
3.4 Research Site
Tamale with a population of 360,579 is the capital of the Northern Region of Ghana and the Tamale Metropolitan District with which it is coterminous Area. The city is located 600 km north of Accra. It is mostly populated by Dagomba people who speak Dagbani and are followers of Islam, as reflected by the multitude of mosques in the city, most notably the central mosque.

Located in the northern part of the country, the city is like a conglomeration of villages where one can find an architectural blend of traditional mud house and modern buildings. While the majority of the houses are roofed with corrugated iron a good number of them are roofed with grass. Many of these mud block compounds have TV antennae and electricity wires. The University for Development Studies has a campus located Tamale.

The new dimension of Tamale’s development is the rush by various companies to open branches in the city. The hospitality industry has grown significantly the new hotels and guest houses built around the city. Amongst Tamale’s new and modern facilities include the newly-constructed Tamale Stadium, replacing the city’s former principal foot 1 pitch, Kaladan Park, with a world-class venue. Indeed, many improvements.

The metropolis experiences one rainy season starting from May to September/October with a peak season in July/August. The mean annual rainfall is 1100mm within 95 days of intense rainfall. Consequently, staple crop fanning is highly restricted by the short rainfall duration.

The dry season is usually from November to March. It is influenced by the dry North-Easterly (Harmattan) winds while the rainy season is influenced by moist South Westerly winds. The mean day temperatures range from 33 Celsius to 39 Celsius the mean night temperature range from 20 Celsius to 22 Celsius. The mean annual day sunshine is approximately 7.5 hours.

In the Tamale Metropolis, a lot of automobile workshops ranging from vulcanizers to engine and chassis can be found at almost every corner of the city. The ops are not built or fenced but mostly opened with a small shed attached. However, some workshops are well fenced with offices for example VWR Auto Services Ltd and Japan Motors. Most workshops do not have
customer rest places so customers who visits such shops are given chairs to sit while their vehicles are serviced.
CHAPTER FOUR
PRESENTATION OF DATA AND DISCUSSION OF RESULTS

4.0 Introduction
This chapter contains the presentation of data and discussion of results. The study took data on the age, sex, and educational background of apprentices. This to identify the particular age group involved in apprenticeship in the automobile industry. The data on the educational background of the apprentices was to determine whether apprentices want to school. Their level of entry to Many educators look upon vocational preparation as a mere job training and they ascribe the term career to occupational fields such as medicine, law, science, business and Arts (La Duco and Barnet, 1974:212) but vocational training is more than mere job training.

The data was also collected on the number of years apprentices were required to learn the trade, the duration that apprentices have been in the job already, legalities and requirements for their training.

Certification was another aspect considered in this study. The study tried to know whether certificates are awarded to apprentices at the end of their training and who does the certification and the value of these certificates whether these certificates can be used to acquire jobs or continue education.

4.1 Presentation of Mate
The study employed simple percentages and bar charts for the presentation of data. Ninety-one apprentices were selected out of a population of 680 apprentices. Stratified sampling method was used to arrive at the total number of apprentices. No computer software like SPSS was used for the analysis of data.
Table 1 Age of apprentices

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>06-10</td>
<td>02</td>
<td>2.30</td>
</tr>
<tr>
<td>11-20</td>
<td>41</td>
<td>45.05</td>
</tr>
<tr>
<td>21-30</td>
<td>46</td>
<td>50.55</td>
</tr>
<tr>
<td>31-40</td>
<td>02</td>
<td>2.20</td>
</tr>
<tr>
<td><strong>Total number</strong></td>
<td><strong>91</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The table presents the age group of respondents in automobile industry within the Tamale Metropolis. Two children within the age bracket of 6 - 10 years were found undergoing apprenticeship training. Further interview revealed that the children went to school up to primary 4 and dropped out and are now working with their father. Their father who is the owner of the shop indicated that the children’s inability to learn in school made them to drop out. The table also showed that 96 percent of the apprentices are within the age bracket of 11 to 30 years.

Table 2 Educational Background

<table>
<thead>
<tr>
<th>School</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tertiary</td>
<td>03</td>
<td>3.30</td>
</tr>
<tr>
<td>Senior High</td>
<td>12</td>
<td>13.19</td>
</tr>
<tr>
<td>Junior High</td>
<td>36</td>
<td>39.56</td>
</tr>
<tr>
<td>Primary</td>
<td>24</td>
<td>26.37</td>
</tr>
<tr>
<td>Nil</td>
<td>16</td>
<td>17.58</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The apprentices have a slightly low level of education. Low level education here is referred to primary and junior high education and all apprentices under this educational bracket are considered to have obtained a low level education. Only 16 apprentices indicated not to have had any formal education and this showed that most youth are been encouraged to go to school. When asked for reason for doing an apprenticeship, 46 apprentices stated that they could not afford the payments of fees in higher education. A further interview revealed that the 36 within the junior school level in the table could not further their education due to reasons ranging from failure in the basic education certificate exams to drop out from school. Apprenticeship training
therefore, is an accessible option for youth that do not have the chance to go through technical/vocational training or senior high school.

Table 3 Brand of Cars Serviced by Apprentices

<table>
<thead>
<tr>
<th>Type of car</th>
<th>Number of respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NN</td>
<td>15</td>
<td>16.48</td>
</tr>
<tr>
<td>OL</td>
<td>15</td>
<td>16.48</td>
</tr>
<tr>
<td>VW</td>
<td>14</td>
<td>15.39</td>
</tr>
<tr>
<td>Other brands</td>
<td>47</td>
<td>52.65</td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
<td>100</td>
</tr>
</tbody>
</table>

Key
Nissan - NN, Opel-OL, VW -VW, other brands -Toyota, Kia, Corsa

Responses showed that there was no workshop that serviced only one brand of cars. When asked why they service different cars 65 trainees said it was due to limitation in revenue generation. If they specialize in one brand of vehicle, it would improve their competencies because practice makes perfect.
Table 4 above indicated that 20 apprentices have done 3 years of apprenticeship in their job and 71 are within 4 to 11 years. The table showed clearly non-uniformity in the duration of apprentices training within the Tamale Metropolis. During the interview, various reasons given for apprentices undergoing training more than 4 years include the nonpayment of graduation fees or commitment fees to trainers, delay graduation and the trainers claim that their apprentices are not competent enough to graduate. The apprentices indicated that they are been exploited by their trainers because they do not compromise with any reason that would prolong their training up to 11 years. Many scholars and International Labour Organisation (ILO) have indicated the duration of apprentices training in this trade not to be more than three years and formal tech/voc schools have their duration of training also to be three years. The apprentices who have stayed for 12 and 13 years indicated during the interview that they have decided to work with their trainers although they have not graduated. It was also revealed that some of those who stayed for long, stayed with their relatives.

<table>
<thead>
<tr>
<th>Number of years</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>4.4</td>
</tr>
<tr>
<td>2</td>
<td>11</td>
<td>12.1</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
<td>22.0</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
<td>17.6</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>11.0</td>
</tr>
<tr>
<td>6</td>
<td>08</td>
<td>8.8</td>
</tr>
<tr>
<td>7</td>
<td>01</td>
<td>1.1</td>
</tr>
<tr>
<td>8</td>
<td>11</td>
<td>12.1</td>
</tr>
<tr>
<td>10</td>
<td>02</td>
<td>2.2</td>
</tr>
<tr>
<td>11</td>
<td>04</td>
<td>4.4</td>
</tr>
<tr>
<td>12</td>
<td>03</td>
<td>3.3</td>
</tr>
<tr>
<td>13</td>
<td>01</td>
<td>1.1</td>
</tr>
</tbody>
</table>

| Total           | 91     | 100        |
Table 5 Commitment Fee Paid by Apprentices for their Training Programme

<table>
<thead>
<tr>
<th>Amount in Gh¢</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>27</td>
<td>29.7</td>
</tr>
<tr>
<td>10</td>
<td>02</td>
<td>2.2</td>
</tr>
<tr>
<td>20</td>
<td>02</td>
<td>2.2</td>
</tr>
<tr>
<td>30</td>
<td>15</td>
<td>16.5</td>
</tr>
<tr>
<td>40</td>
<td>04</td>
<td>4.4</td>
</tr>
<tr>
<td>50</td>
<td>14</td>
<td>15.4</td>
</tr>
<tr>
<td>60</td>
<td>02</td>
<td>2.2</td>
</tr>
<tr>
<td>70</td>
<td>03</td>
<td>3.3</td>
</tr>
<tr>
<td>80</td>
<td>07</td>
<td>7.7</td>
</tr>
<tr>
<td>100</td>
<td>03</td>
<td>33</td>
</tr>
<tr>
<td>110</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>120</td>
<td>04</td>
<td>4.4</td>
</tr>
<tr>
<td>130</td>
<td>03</td>
<td>3.3</td>
</tr>
<tr>
<td>180</td>
<td>05</td>
<td>5.5</td>
</tr>
</tbody>
</table>

The study identified that apprentices pay fees at two different points in time: a fee at the beginning of the training, the “commitment fee” and/or a fee at the end of the training, the “graduation fee”. The fee referred to in this study is the commitment fee which apprentices pay before they are enrolled onto the training. Amounts paid as indicated on the table above, varied from 10 Ghana cedis to 180 Ghana cedis. The apprentices who paid no commitment fee are being trained by their relatives (father, uncle etc) and friends. Variation in the fees was due to no specific amount indicated by any trade union or any government body overseeing the activities of training, so trainers charge whatever amount they desire.

4.2 Training Content
Automobile technology has changed over the years from carburetor engines to onboard computer engines so the study also tried to identify what topics are being taught during the apprenticeship training, the extent of uniformity and variation from the modern technology as these aspects relate directly to Human Resource Development for the Automobile Industry.
Skills, knowledge and attitudes are being transmitted through observation, imitation and on the job experience but lack formal instructions and theory. Knowledge in subjects like basic mathematics, science, drawing and information technology help apprentice in training to understand engine performance very well. The table shows that 90% of apprentices indicated that basic Mathematics, Science and Drawing are not taught in their workshops. Observation was made in the workshops to verify whether the 10% who indicated that these subjects are being
taught was the case. It was found that nothing related to those were taught. Apprentices rather indicated having a previous knowledge in the subjects because of their previous education. There was no chalk board found in any workshop to suggest that apprentices were receiving tuition in these subjects. An interview with the trainers indicated that they do not have any knowledge in these subjects because 85% of the trainers claimed they are illiterates and they were also not taught these subjects during their training. An interview with the apprentices revealed that identification of tools was not a problem but they have problems with engineering names because some wines of the tools and spare parts were mentioned in their local languages. Apprentices during the interview indicated that they have not seen the need to learn computer.

4.2.1 Areas Of Specialization
The study was concerned with four main areas. These are engine and chassis mechanics, auto electricians, vulcanizers and car bodyworks. The following table presents the number of respondents for each category.

<table>
<thead>
<tr>
<th>Engine type</th>
<th>Numbers</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carburetor</td>
<td>27</td>
<td>90</td>
</tr>
<tr>
<td>Injectors</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Electronic</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

From the table above, 30 apprentices were interviewed and these are apprentices who work with car engines. The data showed that 90% of apprentices in this group claimed that they are conversant with servicing carburetor engines and only 10 percent could service injectors. The reason given was that injection engines have more electrical work than carburetor engines. The 90% of apprentices in this group who claimed they are conversant with servicing carburetor engines also indicated through an interview that their trainers have limitations in servicing injector engines. Electronic engines have complex electrical system and are tuned by auto-electricians, unfortunately they do not have any electrical skills.
**Figure 2** Apprentices For Bodyworks and Spraying

<table>
<thead>
<tr>
<th>TRAINING CONTENT</th>
<th>CHEM</th>
<th>MPB</th>
<th>FB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
</tbody>
</table>

**Key**

N = No

Y = Yes

Chemicals  =  CHEM

Metal and plastic bodies  =  MPB

Finishing Body  =  FB
A total of 27 apprentices in auto-body works and spraying were considered in the study. The data collected in this regard is to find out the extent of knowledge of apprentices in chemicals they use for spraying, differentiate plastic bodies from metal car bodies and whether they are aware of different types of finishing (e.g. rough and smooth) and their effects on the outlook of vehicles. The response showed that 90% of them know the chemicals, 100% could differentiate metal bodies from plastic and 64% also indicated they know finishing. The data in this part of the study showed that apprentices have problems only with the finishing but further interview with apprentices revealed that they do not have knowledge in the description of types of finishing.

<table>
<thead>
<tr>
<th>Type of engines</th>
<th>Percentage(%)</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carburetors</td>
<td>89</td>
<td>24</td>
</tr>
<tr>
<td>Injectors</td>
<td>93</td>
<td>25</td>
</tr>
<tr>
<td>Electronics</td>
<td>67</td>
<td>18</td>
</tr>
</tbody>
</table>

Twenty-seven of the apprentices were in the auto-electrical related sector. Apprentices in auto-electrical sector have their training tagged to different types of engines because various engines operate on different electrical system. For example; carburetor engines have a simple electrical system. The complexity is in the injector engines and onboard computer engines. The data indicated that 93% and 88% could service carburetor and injector engines respectively and the reason is that trainers have gained experience in these areas. But only 60 apprentices indicated that they could service cars with electronic systems. This number could service electronic cars revealed that their trainers have knowledge in the electronic system of cars. The apprentices indicated they have limitations in servicing electronic cars because their trainers do not teach them.
There were only 7 apprentices who were in the vulcanizing section. Seven apprentices indicated that they know the working procedure but their limitations are the chemical composition of tyres and the use of electronic equipment like tyre alignment test machine used in checking tyre alignment. The main reasons that account for this is the lack of modem electronic equipment and apprentices not being taught by their trainers (masters). Their trainers have not also taught the apprentices chemical composition of tyres. It was identified during the interview with the trainers that this aspect of training is normally not considered during apprentices training.
Here, all 91 apprentices were involved. One of the objectives of the study was to find out if certificates are awarded at the end of the training by trainers and what the value of these certificates might be. 62% of apprentices indicated that certificates are not awarded at the end of training. Thirty-eight percent (38%) said certificates were given. This group of respondents referred to National Vocational Training Institute (NVTI) proficiency certificates. This certificate is awarded to apprentices through proficiency examination organized by National Vocational Training Institute. Apprentices who go for these certificates are those who seek for employment in the formal, garages like Japan Motors and VWR auto services. This was
confirmed by the regional Co-ordinator of NVTI. He added that the exams are practically based. The candidates do not write exams in the theory. An interview with the trainers revealed that no certificate is awarded to apprentices at the end of training by any trainer. Their main reason is that there is no examining body and therefore no union to award certificates. The study also found that no apprentice goes through any form of test before the person is graduated by the trainer. An interview with technical/vocational institute personnel revealed that because certificates awarded by National, Vocational Training Institute do not include theory and they cannot be used as a requirement for any formal technical and vocational school.

4.3.0 Discussion of Results

Having presented the data, this section discusses the data in detail. For consistency, the discussions shall follow the same order as the presentation starting with Age and apprenticeship in Tamale Metropolis. The ages of apprentices shown in table 1 on page 42, indicates 2 children below 10 years undergoing training. They claimed they are learning the trade but it was observed that these children were mostly running errands for the senior mechanics and their master. Educational theories of child development do not agree for a child at the age below 15 years to enroll in such training programmes. The development stage of a child between the ages of 7 to 11 years is limited significantly in the ability to solve abstract problems but abstract thinking is possible from 15 years and above. At this stage the child can now marshal logical arguments and analyses situations critically using scientific methods (Amisah, 2001).

Ghana’s constitution does not allow children below 18 years to undergo such training. Article 28 of the constitution, the children’s act 560 in the year 1998 was enacted by parliament to reform and consolidate the law relating to children, inter alia to regulate child labour and apprenticeship for ancillary masters concerning children generally. In particular, section 87 of the act states: “no person shall subject a child to exploitative labour”. It defines a child as a person below the age of 18 years to undergo apprenticeship training. And therefore children below 15 years should not undergo apprenticeship training. In contrast, children below 15 years should be encouraged to go to school. 90% of apprentices undergoing the training are within their youthful ages (20 to 35 years).
4.3.1 Educational Background of Apprentices.
Table 3 page 42, revealed that 16% of apprentices have not had any formal education while 60% have had some formal education from primary school level up to junior high school level. The study identified 3% of apprentices who are having their tertiary education and are still doing apprenticeship training. Interviews revealed that these apprentices went through technical school and wrote technician exams in automobile engineering but had weak grades. They re-sat the exams but found the practical aspects relevant so while they got admission in the polytechnic they still found it necessary to continue their apprenticeship.

The study has identified that the ‘way side fitters’ as they are often called within the Tamale Metropolis are no longer illiterates. They have low levels of education. This implies that if educated people are trained this way, they will understand better and have improved skills, thus they are likely to render better services.

4.3.2 Duration in Apprenticeship and Lack of Uniformity
Table 4 on page 46 indicated a very wide variation in the duration apprentices spend learning the automobile trade. From the table 78% of apprentices have been in training for more than 3 years and this agrees with the previous research. Many scholars have published papers especially in International Labour Organisation (ILO) and research institutions. They indicated an average duration for apprentices training as a little above 3 years. Training period for trades such as mechanical, building and automotive take the longest time compared to other major trade groups like tailors and hairdressers. It is estimated that apprenticeship in these three trade groups could take about three and a half years. On the other hand, it takes at most about two and half years for an apprentice to complete training in the other trades. (GLSS, 2008).

Interviews with the apprentices who had stayed in their training shops for over 3 years revealed an exploitation of labour. These apprentices indicated that they are now working for their trainers and at the end of each day they are given some little money. Getting some money even depends on the availability of jobs and so long as there is no job the little they get even eludes them.
When questioned why they could not ask for permission from their trainers to establish their workshops to get some money and come back to pay for their graduation fees, 87 apprentices said non-payment of graduation fees would mean not receiving blessings from their trainers. To them the blessings of their trainers are very paramount. They related it to similar cases in the past where apprentices left without their masters’ blessings seemed to have had initial difficulties in establishing themselves. The difficulties were interpreted to mean curses from their trainers. The situations only changed after they paid what they owed their trainers.

4.3.3) Relationship Between Training Content and Customer Services

Job performance and training learning must be integrated to be effective. First because training interventions progressively move closer to the job in order to achieve the learning objectives, the linkage between training and job performance is vital (Mathis et. al., 2004). The training of apprentices must be related to customer satisfaction. In apprenticeship training, skills, knowledge and attitudes are transmitted through observation, imitation and on the job experience. These aspects may or may not be taught consciously.

The study used customer services to measure the performance of apprenticeship training. In this regard, customers were interviewed to give their impressions about the services of automobile mechanics. Customers with carburetor and injection engines interviewed, expressed their satisfaction of the services the mechanics render to them. But those who are not satisfied with the performance of automobile mechanics gave their reasons to include that their cars operate on onboard computer system and mechanics which is still unfamiliar to auto mechanics in the Tamale Metropolis. They service their cars in Kumasi or Accra. These cars are serviced mostly using manuals and mechanics cannot read or understand the engineering language. This constitutes their major weakness.

Apprenticeship needs to respond to new and increasingly complex knowledge, particularly in modern trades characterized by rapid technological change (Nübier, 2008; ILO 2008). The findings of the study were quite different because there seemed to be no new knowledge infusion in the apprenticeship training. With the present system of apprenticeship, masters teach their apprentices the way that they were taught and there has been little infusion of new technology.
and new designs. The training content (what the apprentices are learning) was examined and lacked the major subjects like mathematics, science and engineering drawing that would give a better understanding of engine performance to the apprentices. The study found out that apprentices could service carburetor and injection engines very comfortably but have problems with the on-board computer engines. These engines are fairly new and are tuned only by electronic means. The servicing of these engines mostly is done by using the vehicle manuals which apprentices have limitations because of the engineering language. This creates weakness in the quality of learning.

Addressing Human Resource Development involves upgrading of technological competence through training. Training can be one of the instruments that, together with other measures like policies, address the challenge of the informal sector. The role of training is not to prepare people for the informal sector and keep them in the informal sector; or to expand the informal sector; but rather it should go in conjunction with other instruments, such as fiscal policies, provision of credit, and extension of social protection and labour laws, to improve the performance of enterprises and the employability of workers in order to transform what are often marginal, survival activities into decent work fully integrated into mainstream economic life. ‘Prior learning and skills gained in the sector should be validated, as they will help the said workers gain access to the formal labour market. The social partners like NGOs and engineering institutions should be fully involved in developing these programmes’ (ILO, 2000).

Similar to Donkor’s (2009) findings, the apprentices and their trainers lack access to current technological information and upgrading. They lack knowledge about environmental issues about carbon emissions into the atmosphere and entrepreneurial skills to manage their workshops (Donkor, 2009:2). This problem seemed to be the major problem for apprentices in automobile industry in Tamale Metropolis.

4.3.4 Fees and Enrolment.
The study identified that apprentices pay commitment and graduation fee. Commitment fee is as mentioned earlier is paid before the apprentice start the training and the graduation fee is paid after the training is completed. Commitment fees are accompanied with tools and equipment for
the training and sent to the trainer before training commences. Automobile apprentices accompany their amounts with a toolbox—that contains spanners, hammers and screw drivers. The costs for the toolboxes in the carpenters and mechanics trade significantly exceed those in the hairdressing trade (Breyer, 2007: 15).

Responses from the apprentices indicated that 60 of the respondences had their fees paid by their parents or guardians but 35% (91) claimed they paid their own fees (commitment fees) through savings. The apprentices revealed that quite apart from the fees they paid to their trainers, they incur living expenses which includes transportation to work, feeding and health. This is a problem particular to those who are not living with their parents in the Tamale Metropolis.

Informal apprenticeships are often praised for being cost effective and accessible, even for poor and less educated youth. Nevertheless, the requirement of fees at the beginning of the training might restrict capital and credit for the constrained youth. The financing of an apprenticeship is especially difficult for youth from very poor families and vulnerable youth like street children without any family support. Apprenticeship training in Ghana is not even an alternative for street children and (former) child labourers as major obstacles include fees as well as living expenses especially since it is rather uncommon for apprentices in Ghana to lodge in the master’s house these days. The study identified that those vulnerable children who pursue apprenticeship by living with their trainers become labourers to them because they run errands and do other house chores.

Trainers were also interviewed to find out reasons why apprentices have to pay fees before and after the training. The trainers explained that some apprentices during training damage customers’ cars which have to be paid for by their trainers/masters. The masters/trainers claimed that graduation fees are for the blessings of apprentices which they will receive at the end of their training. They further explained that every apprentice is expected to first bless the master/trainer before they are blessed.

The study identified so much variation in the payments of fees among the apprentices. From the data, some apprentices did not pay commitment fees because they are either undergoing the
training with their parents or relatives. Others paid between thirty to forty Ghana cedis while some paid as much as 180 Ghana cedis. So there is a possibility that some apprentices are being exploited since there is no fixed amount for commitment and graduation fees and no institution is monitoring the collection of fees.

4.3.5 Enhancing the Quality of Transfer of Skills.
Apprentice training progresses in phases. Similar to Abban and Quarshie (1993) most apprentices start with an introductory phase during which the novice is taught and made to do menial jobs such as cleaning the workshop or running errands. This was identified through observation sessions of the study. The next phase consists of getting to know all tools of the trade and spare parts. An apprentice is supposed to observe and learn about the work. Skills knowledge and attitudes are transmitted through observation, imitation and on the job experience. Time and chance have passed for this method to be used because spare parts of cars are becoming expensive for apprentices to make mistakes. Most cars now use the body and bulbs as sensors and so any slight scratch could cause the component to malfunction. Apprentices’ mistakes are becoming very expensive and must be avoided.

Very vital topics are missing in the training that needs to be included to meet the modern challenges of business establishment. Subjects like entrepreneurial skills and business management cannot be handled by the trainers due to their low level educational background.

It was identified that apprentices are experiencing low learning effects because there are too many apprentices in a workshop. It was observed that some workshops have engaged as many as 15 apprentices but the numbers of cars that come for servicing are not many. This promotes low learning effect and in order to have an adequate learning effect, the number of apprentices to be trained per workshop should not be too large.

4.3.4 Certificates and Their Value.
The data gathered revealed that there is no end of apprenticeship training exams and no award of certificates. But ideal situation should have been for the apprentices to go through a trade test o identify their competencies before graduating them. Any trainer who identifies an apprentice to
be fit or have completed some years of training for graduation, informs the local union who intends informs their national executives. An examination is organized for the candidates around the same area. This examination determines whether the apprentice is qualified to graduate or not, after which the trainer organizes a graduation ceremony if the candidate is successful.

In the case of automobile engineering apprenticeship training, no union exists. Apprentices are not tested after their training period and no certificate is awarded. The question is how the trainers know their apprentices have gained enough experience to graduate. Sixty-one percent (61%) of the trainers claimed that the competencies of an apprentice are determined during training and there is no need for any post training examination because they can see clearly when the apprentices can service a car. In addition, they also admitted that there is no uniformity in what they teach because they are not following any syllabus.

Certificates awarded by trade unions are not accepted as entry requirements in the government technical/vocational institutions. This was said by all educational personnel interviewed. The main reason is the lack of theoretical component in the apprenticeship training. The apprenticeship training also lack very important subjects like mathematics, science and technical drawing which are essential for the automobile industry.

4.3.7 The Need to Establish a Trade Union
The study through the collection of data presented above, established the fact that lack of uniformity exist in the operations of apprenticeship training. For example, there is so much variation in the payment of commitment fees and duration of training. One of the outcomes of non uniformity is the non existence of a trades union. This leads to the lack of unity in their operations. Comparing it to tailors and beauticians where the corresponding associations exist, things like end of training test are done in an orderly manner. It was identified that apprentice union exist in these trades and they go for meetings as their trainers do and this gives them opportunities to discuss matters of concern. Certain issues are resolved in apprentices’ meetings or referred to the executives of the union for a redress. This has organized these associations very well in their operations. The automobile industries in Tamale Metropolis are not organized. The
Trade associations in Ghana play very important roles which include co-ordination and harmonization of apprenticeship schemes, networking for the promotion of their businesses, soliciting for financial assistance to expand their businesses, initiation and implementation of training programmes for members, assisting the District Assembly in the collection of taxes, and prompting government to create an enabling environment for trade associations to expand their businesses (Dave, 1990). This is lacking among automobile industry. The Ghana National Association of Garages established in the 1980s are to become members of a well organized trade association under the Council of Indigenous Business Association (CIBA) could be an option for the workers in automobile industry to become members. In Ghana, trade associations are active in the field of apprenticeship training, developing rules and setting standards regarding the duration, curriculum and financial arrangements of apprenticeships (Roeske, 2003). Joining CIBA may be a first step to more organized industry and uniformity and consequently forming a union.
CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Summary of Findings

The study looked at apprenticeship training and human resource development in the Tamale Metropolis. It focused on automobile industry with the main objective is to find out how apprenticeship in the industry contribute to Human Resource Development in the Tamale Metropolis. In this chapter, the summary, conclusion and recommendations of the study are presented.

The study identified that children below the age of 15 years were engaged in apprenticeship training. Observations in the workshops revealed these children although they are learning, much of their work was running errands for the senior apprentices and their trainers. Although the children may be happy doing the apprenticeship, it contravenes the International Labour Organization (ILO) laws. ILO minimum age convention, 1973 (no. 138), sets the minimum age for employment at 15 years. This is a challenge in the Metropolis. This may be because apprentices have a slightly low level of education or have not been to school at all and have fewer job opportunities. Only 16 apprentices in page 44 indicated not to have had any formal education.

Apprentices within the duration of more than three years in their training workshops are undergoing exploitation of labour. From the data (page 46) (71) of them had not been informed by their trainers they are competent enough to graduate. It was also identified that even though some apprentices have stayed more than three years the problem is due to their incompetency. But the concerns of these apprentices are the lack of end of training exams and the maximum authority of the trainer to determine their competence. The apprentices see it as autonomy of their trainers over them which can delay their graduation unnecessarily. The apprentices above three years of apprenticeship claimed they are been exploited because they provide services to customers which they think they could have been doing after their graduation.
The outcome in lack of uniformity in the payments of graduation and commitment fees is a challenge. From the data some apprentices pay nothing for the commencement of their training while others pay as much as 180 Ghana cedis for the same training. The study identified that quite apart from the fees paid by apprentices, their living expenditure also needed to be accounted for, particularly those who are not staying with their parents.

The absence of certification of apprenticeship training as identified by the study does not boost the morale of apprentices. It has therefore become very difficult for employers to know the competence level of such apprentice for considerations for employment and to identify the training needs. Similarly, it is difficult to know where to place them if they choose to go for formal education.

The study used customer services to measure the performance of apprenticeship training. In this regard, customers were interviewed to give their impressions about the services. It was identified that customers with cars using injection and carburetor systems are satisfied with the services rendered by the automobile industry but customers with cars operating on on-board computer systems are not satisfied. The study therefore revealed that automobile industry in Tamale Metropolis is lacking knowledge in the servicing of these cars. It was also identified that apprentices training does not include subjects like mathematics, science, and technical drawing. The training is practical base. The study identified that there is no end of apprenticeship training exams and no award of certificates.

5.1 Conclusion
Lack of uniformity in the training content, duration and the lack of certification were established. It was identified that there is so much variation in the commitment fees apprentices pay and this cannot favour rural youth to engage in apprenticeship because fees and living expenses could be high. There is so much variation in the number of years apprentices undergo training. Some trainers are using the non-existence of uniformity training period to exploit apprentices in terms of labour.
Human resource development in the automobile industry within Tamale Metropolis has been neglected over the years. The study identified that both trainers and apprentices are not connected to any well established association that would engage them in the upgrading of their skills and knowledge like the tailors and dressmakers. This may cause problems in the future because of shortage of skilled human resource in the automobile sector.

In the white paper report on education reform review, the government indicated its intention to constitute a national apprentice training board to oversee and regulate apprenticeship training and handle issues concerning registration, content, duration and certification. (Ministry of Education, Youth and Sports, 2004). This may be a relief to apprentices should it be established and help formalize the training which would go a long way to improve the transport sector. Many people have related road accidents in the country to lack of maintenance of vehicles and therefore there is the need to train the human resource. It is however concluded in relation to the findings that apprenticeship training within the Tamale Metropolis is lagging behind modern technology.

5.2 Recommendations
The training and acquisition of skills in the informal sector with a larger potential for employment has had little support from government. The sector depends virtually on traditional apprenticeship schemes for skills training, the cost of which is borne by the individual trainees or their parents/guardians. The cumulative effect of this neglect of the informal sector has been low incomes and savings, low level skills, underemployment and unemployment (World Bank Report, 1992). The apprentices in automobile training in the Tamale Metropolis are no exception to this problem. One major problem most scholars and government institution have identified over the years in relation to this neglect is lack of uniformity in training content, duration and certification. The president of the committee on the review of Educational Reforms in Ghana also observed with much concern, the lack of uniformity in the training content, duration and certification (Republic of Ghana, 2002). In view of this, the government needs to empower the polytechnics in the country to suggest a curriculum that would be used for the training of master craftsmen/women in the automobile industry in the country. The Polytechnics should arrange in-service training programmes for master craftsmen and women who are handling the apprenticeship training.
The government and NGOs should also consider supporting or assisting apprentices with cash or tools during their training period and after. The financing of an apprenticeship might be especially difficult for youth from very poor families and vulnerable youth like street children without any family support.

The government needs to draw a policy that would consider the control of quality of skills and set standards in training and ensure a systematic diffusion of new skills and technologies into apprenticeship. This would help to improve automobile apprenticeship training in Tamale. The policy should link with the formal training system for example by combining apprenticeship training with theoretical teaching in training centres. There should be an improvement of access for girls to apprenticeship training through a change in traditions and recruitment practices. The Polytechnics in the country should be provided with adequate logistics to carry out this exercise.

This research has been limited in several ways, principally in its geographical coverage. It is therefore suggested that similar studies be carried out in other parts of the country to come out with a national policy on apprenticeship training in general but specifically for auto technicians.


Miami-Dade County Code, Chapter 8A, Article YHA Motor Vehicle Repair Ordinance” (PDF). Miami-Dade County, Florida.


APPENDICES
Appendix I

Questionnaire
University for Development Studies
Apprenticeship training and human resource development in Tamale Metropolis: the case of Automobile Industry. Respondents are assured that all answers provided would be strictly confidential
Engine and chards mechanics

NAME……………………………………………………………………(APPRENTICE ONLY)

AGE…………………………………………………………SEX: M/F………………

SCHOOL ATTENDED: PRIMARY □ JSS □ SSS □ TERTIARY □ NII □ (THICK)

TRADE……………………………………………………..LOCATION…………….…..

VEHICLE OF SPECIALTY: OPEL, NISSAN, VW, TATA, BENZ. (underline) (Add if the brand is not written)

COMMITMENTS OF APPRENTICES BEFORE COMMENCEMENT OF TRAINING

1. How many years did you sign to learn the trade?.................
2. How much is the cost of your training?..................................................
3. How long have you been in the job?......................................................
4. Was there any legal agreement? Yes/No

TRAINING CONTENT

1. Does your master teach you basic mathematics and science? Yes/No.
2. Do you learn basic drawing in the workshop? Yes or No.
3. Can you describe an engine part? No/Yes. If yes, name some parts of an engine
4. Can you buy engine parts by using their specifications and not by samples? Yes/No.
5. Write out 3 engineering basic tools
6. Do you use electronic or digital operates tools to diagnose faults? Yes/No
7. Which of the engine types can you service well (Carburetors, injectors, electronic) underline.
8. Do you overhaul engines in your shop? Yes/No.
9. Can you explain the performances of an engine with sketches and diagrams? Yes/No. If yes sketch.
10. Do you use computer? Yes/No
11. Do you know how to drive? Yes/No.
12. Do you know basic safety precautions in your shop? Yes/No. If yes name at least three.

CERTIFICATION

1. Will you write exams at the end of your training? Yes/No. if yes state the examining body by ticking the following:- Union, NVTI,
2. Do you think you can use the certificate to enter any Government technical institutions? Yes/No.
3. Do you know the areas you are supposed to cover before writing the exams? Yes/No.
4. Would you like to further your education? Yes/No.
Appendix 2

Questionnaire

University for Development Studies

Apprenticeship training and human resource development in Tamale Metropolis: the case of Automobile Industry. Respondents are assured that all answers provided would be strictly confidential

Auto electricians

NAME ...............................................................................................(APPRENTICE ONLY)

AGE:..........................................................SEX: M/F...................................................

TRADE:..................................................LOCATION:........................................

VEHICLE OF SPECIALTY: OPEL, NISSAN, VW, TATA, BENZ, (underline)
(Add if the brand, is not written)

COMMITMENTS OF APPRENTICES BEFORE COMMENCEMENT OF TRAINING

5. How many years did you sign to learn the trade?

6. How much is the cost of your training?

7. How long have you been in the job?

8. Was there any legal agreement? Yes/No

TRAINING CONTENT

13. Does your master teach you basic mathematics and science? Yes/No.

14. Do you learn basic drawing in the workshop? Yes or No.

15. Can you describe an engine part? No/Yes. If yes, name some parts of an engine
16. Can you buy engine parts by using their specifications and not by samples? Yes/No.
17. Write out 3 engineering basic tools ..........................................
18. Do you use electronic or digital operated tools to diagnose faults? Yes/No.
19. Which of the engine types can you service well (Carburetors, injectors, electronic) underline.
20. Do you overhaul engines in your shop? Yes/No.
21. Can you explain the performances of an engine with sketches and diagrams?
   Yes/No. If yes sketch.
22. Do you use computer? Yes/No.
23. Do you know how to drive? Yes/No.
24. Do you know basic safety precautions in your shop? Yes/No. If yes name at least three.

   CERTIFICATION

5. Will you write exams at the end of your training? Yes/No. if yes state the examining body by ticking the following:- Union, NVTI,
6. Do you think you can use the certificate to enter any Government technical institutions? Yes/No.
7. Do you know the areas you are supposed to cover before writing the exams? Yes/No.
8. Would you like to further your education? Yes/No.
Appendix 3
Questionnaire
University for Development Studies
Apprenticeship training and human resource development in Tamale Metropolis: the case of Automobile Industry. Respondents are assured that all answers provided would be Strictly Confidential
Vulcanizing

NAME .................................................................(APPRENTICE ONLY)

AGE: .................................................................SEX: M/F:........................................

SCHOOL ATTENDED: PRIMARY□ JSS□ SSS□ TERTIAR □ NI□ (THICK)

TRADE: ...........................................................LOCATION:

VEHICLE OF SPECIALITY:  OPFIL, NISSAN, VW, TATA, BENZ, (underline) (Add if the brand is not written)

COMMITMENTS OF APPRENTICES BEFORE COMMENCEMENT OF TRAINING

1. How many years did you sign to learn the trade ?.................
2. How much is the cost of your training ?........................................
3. How long have you been in the job ?........................................
4. Was there any legal agreement? Yes/No

TRAINING CONTENT

1. Does your master teach you basic mathematics and science? Yes/No.
2. Do you learn basic drawing in the workshop? Yes or No.
3. Can you describe an engine part? No/Yes. If yes, name some parts of an engine.........
4. Do you use computer? Yes/No
5. Do you know how to drive? Yes/No.
6. Do you know basic safety precautions in your shop? Yes/No. If yes name at least three.

CERTIFICATION
1. Will you write exams at the end of your training? Yes/No. if yes state the examining body by ticking the following:- Union, NVTI,
2. Do you think you can use the certificate to enter any Government technical institutions? Yes/No.
3. Do you know the areas you are supposed to cover before writing the exams? Yes/No.
4. Would you like to further your education? Yes/No.
Appendix 4
Questionnaire
University for Development Studies
Apprenticeship training and human resource development in Tamale Metropolis: the case of Automobile Industry. Respondents are assured that all answers provided would be
Strictly Confidential
Bodyworks and Chasis

NAME .................................................................(APPRENTICE ONLY)

AGE: ..............................................................SEX: M/F: ........................................

SCHOOL ATTENDED: PRIMARY□ JSS□ SSS□ TERTIAR□ NI□ (THICK)

TRADE: ..................................................LOCATION: .................................

VEHICLE OF SPECIALITY: OPEL, NISSAN, VW, TATA, BENZ. (underline) (Add if the brand is not written)

COMMITMENTS OF APPRENTICES BEFORE COMMENCEMENT OF TRAINING

1. How many years did you sign to learn the trade? .................
2. How much is the cost of your training? ........................................
3. How long have you been in the job? ........................................
4. Was there any legal agreement? Yes/No

TRAINING CONTENT

1. Does your master teach you basic mathematics and science? Yes/No.
2. Do you learn basic drawing in the workshop? Yes or No.
3. Can you describe an engine part? No/Yes. If yes, name some parts of an engine
4. Can you buy engine parts by using their specifications and not by samples? Yes/No.
5. Write out 3 engineering basic tools
6. Do you use computer? Yes/No
7. Do you know how to drive? Yes/No.
8. Do you know basic safety precautions in your shop? Yes/No. If yes name at least three.

CERTIFICATION
1. Will you write exams at the end of your training? Yes/No. if yes state the examining body by ticking the following:- Union, NVTI,
2. Do you think you can use the certificate to enter any Government technical institutions? Yes/No.
3. Do you know the areas you are supposed to cover before writing the exams? Yes/No.
4. Would you like to further your education? Yes/No.
APPENDIX 5

INTRODUCTION
Interviews were conducted for people whose works are related to automobile services delivery. The interview was conducted for Northern Regional Co-ordinator of National Vocational Training Institute, Transport Officer of University for Development Studies as a customer, Chief Internal Auditor Ghana Cotton Company also a customer, Head of Automobile Department of Dabokpa Technical Training Institute and Northern Regional Labour Officer. The interview notes were written down as the interviewee answer questions after which it was edited and analysed.

INTERVIEW SCHEDULES FOR OTHER

12th January, 2010

INTERVIEWEE: (A) Interview for the REGIONAL CO-ORDINATOR NATIONAL VOCATIONAL TRAINING INSTITUTE (NVTI)

Questions:
1) Types of Technical examinations conducted?
2) The existence of curriculum
3) What is the duration an apprentice is expected to go through before writing the exams?
4) Could you tell me about NVTI
5) Can the certificate holder gain admission into a higher school?
6) What stage or year is the candidate expected to enter the higher school?
7) Is the existing syllabus drawn to cater for technological changes in the design and function of vehicles?

RESPONSE OF THE REGIONAL CO-ORDINATOR OF NVTI.
The Northern Regional Co-ordinator explained that proficiency exams is conducted for apprentices which involves only practical work. During these exams, the candidate is requested to dismantle an engine re-assemble it while an Examiner observes him/her and awards marks. Proficiency exams has grade one and two. Grade one is offered by fresh candidates so this becomes a requirement for grade two exams. In effect grade two is higher than grade one. The Co-ordinator indicated that candidates are not given tuition by NVTI but the examination is opened to all artisans who have undergone apprenticeship training so candidates who sits for these examinations do not have any foreknowledge of what they are expected to know. This sometimes defeats the right modalities of a good exams and the NVTI is making efforts to correct these anomalies. He indicated that the certificates awarded cannot be used as an entry requirement to any school of higher learning because it is only practically based.

(C) INTERVIEW FOR AUTOMOBILE TRAINERS

Questions:
Tell me about your workshop- who are being trained and how you do it.

1) Do you collect fees from apprentices before and after training? Why?
2) Do you consider their age limits before admitting them for training?
3) Do you have an association or union?
4) Tell me about the activities of the union?
5) What type of engines can you service and why?
6) Have you being going for refresher courses to update your knowledge?
7) Who organizes such refresher courses?
8) Do you award certificate to apprentices after training and why?
9) Any other matter?

24th January, 2010

(D) INTERVIEWEE: HEAD OF AUTOMOBILE DEPARTMENT
DABOKPA SENIOR HIGH (TECH/VOC), TAMALE

Questions:
## REQUIRED MINIMUM GENERAL EDUCATION BACKGROUNDS FOR THE QUALIFICATION AND LEVELS

<table>
<thead>
<tr>
<th>Qualification Level</th>
<th>Designation of Qualification</th>
<th>Required Entry Background (General Education and Previous Qualification)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Proficiency I</td>
<td>From non-formal education to some basic education but less than BECE</td>
</tr>
<tr>
<td>Level 2</td>
<td>Proficiency II</td>
<td>Proficiency I</td>
</tr>
<tr>
<td>Level 3</td>
<td>Certificate I</td>
<td>Basic Education Certificate of Education (BECE) or Proficiency II</td>
</tr>
<tr>
<td>Level 4</td>
<td>Certificate II</td>
<td>Possession of Senior High School Certificate of Education or Certificate II</td>
</tr>
<tr>
<td>Level 5</td>
<td>Diploma</td>
<td>Possession of Senior High School Certificate of Education or Diploma</td>
</tr>
<tr>
<td>Level 6</td>
<td>Higher National Diploma (HND)</td>
<td>Possession of Senior High School Certificate of Education or Diploma</td>
</tr>
<tr>
<td>Level 7</td>
<td>B. Tech</td>
<td>Possession of HND</td>
</tr>
</tbody>
</table>

### Qualification Levels:
Lower levels of the qualifications hierarchy are subsumed by higher levels. For examples, competencies that constitute Proficiency I are subsumed in competencies that constitute Proficiency II, and Certificate II competencies subsume Certificate I competencies and so on.

Not all occupational areas must have Proficiency level qualifications; similarly, not all occupational areas must go up to level 7. For instance, masonry can have Proficiency I and II but will probably not go beyond Certificate II. Beyond Certificate II, masonry will probably be subsumed in something like Building Construction and Building Technology.

10th January, 2010

(E) INTERVIEWEES: 2 CUSTOMERS ELECTRONIC OPERATED CARS INJECTORS OPERATED CARS

Questions:
1) Do you service your car in Tamale? Yes/No.
2) Do you get good services in Tamale? Yes/No
3) Do you think the apprentices in automobile field needed some training?
4) If yes suggest the areas they are incapable.

RESPONSE OF THE CUSTOMERS

TRANSPORT OFFICER, UNIVERSITY FOR DEVELOPMENT STUDIES

The Transport Officer of university accepted to be interviewed. He lamented over servicing of the University vehicles due to lack of adequate personnel. The mechanics of late are facing problems in rendering their services due to the following;

a. Lack of knowledge to tune the vehicles.
b. Most mechanics do not know the recommended oil and spark plugs.
c. Vehicles imported into the country do not have manuals. Even if the vehicles come with manuals most apprentices cannot follow the servicing procedure because everything is in engineering language.
d. The automobile mechanics do not have diagnostic tools.
e. He indicated that most new vehicles have onboard computers that regulate fuel consumption but almost all the mechanic found around lack knowledge of servicing these brand of vehicles.

f. Most vehicles also have sensor units. These units are very delicate and needs care to work on but most of the mechanics do not identify these units in the vehicles.

The Transport Officer of UDS concluded that the Government take human resource development in this area of fast technology service.

THE CHIEF INTERNAL AUDITOR
GHANA COTTON COMPANY
This personnel use the new Toyota Hilux pick-up that belongs to the company. One morning the vehicle could not start so the services of an auto-electrician was employed. The mechanic could not rectified the fault but ended up fusing the onboard computer. The specialist who was invited from Accra identified the damage. The pick-up is grounded and the company needs not more than three thousand Ghana cedis (GH₵3,000.00) to maintain it. The interviewee emphasized that our mechanics should be properly trained. There should be a body to monitor their activities. Most of them do not have proper tools and diagnostic equipments.

REGIONAL LABOUR OFFICE, TAMALE
There is no labour act spelling out the payments of employees at the artisan grade but most unions have their conditions of service that is used to place artisans. Their grading points are also determined by long service. He indicated that automobile mechanics do not have any union for that matter their employment grading points may not be easy. But he concluded that the single salary spine may include all these grade points for some forms of uniformity.