

**TRAINING OF PHYSICALLY CHALLENGED PERSONS FOR GAINFUL
EMPLOYMENT IN AUTOMOBILE INDUSTRIES IN KADUNA, KADUNA STATE**

BY

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2007 / 1 / 27257BT

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION

SCHOOL OF SCIENCE AND SCIENCE EDUCATION

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE

OCTOBER, 2012

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**A PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
AWARD OF BACHELOR OF TECHNOLOGY**

(B. TECH) IN INDUSTRIAL AND TECHNOLOGY EDUCATION

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE

OCTOBER, 2012

CERTIFICATION

I Olude Lydia Folashade Matric No. 2007/1/27257BT an under graduate student of the department of Industrial Technology Education certify that the work embodied in this project is original and has never been submitted in part or full for any other Diploma or Degree of this university.

Name

Signature and Date

APPROVAL PAGE

This project has been read and approved as meeting the requirement for the award of B. Tech. Degree in Industrial and Technology Education, School of Science and Science education, Federal University of Technology, Minna.

Supervisor

Signature and Date

Head of Department

Signature and Date

External Examiner

Signature and Date

DEDICATION

This project is dedicated to Almighty God for His unfailing love and guidance over my life and all my entire family members for their endless support and love.

ACKNOWLEDGEMENTS

Firstly, my sincere gratitude goes to Almighty God for giving me the strength, grace, knowledge and guidance to overcome all the difficulties encountered carrying out this project and my Bachelor of Technology (B. Tech) Programme successfully.

My special thanks and sincere gratitude also go to Mallam Garba Usman, my dynamic supervisor for his professional guidance and leadership and of course his kind interaction during the course of his lectures. Gratitude also to the project co-coordinator Mr Moses Saba and the Head of Department of Industrial and Technology Education Department, Dr Emmanuel Jose Ohizie and all the Lecturers in the Department of Industrial Technology Education, Federal University of Technology Minna who have contributed greatly to my life. May God Almighty grant you long lives and be with you all.

I also acknowledge my guardian Mallam Abdulkadir Mohammed for his resourcefulness and guidance towards the realization of this project. Finally, my sincere love and gratitude to my family members, friends and well wishers.

ABSTRACT

In this research work, the training of physically challenged persons was studied to identify the modalities for the training of physically challenged persons for gainful employment in Automobile Industries in Kaduna, Kaduna state. Three research questions and two Null hypothesis were formulated to guide the study. A fifty (50) items questionnaire was developed and used to collect data from the respondents and Twenty five (25) master craftsmen and fifty (50) physically challenged persons were randomly selected from kakuri rehabilitation center in kakuri, Kaduna state. Data collected was analyzed using frequency count, mean, standard deviation and T-test statistics. The null hypotheses were tested at 0.05 level of significance and seventy three (73) degree of freedom. Furthermore, the findings revealed that physically challenged persons would gain employment into automobile industries if provided with both the technological advancement equipment and trainings (skills on Operation principle) for ease in diagnoses of automobile service and repair of any fault related to the conventional motor vehicle and specialized transport service and mobility system which ease movement and accessibility to modern workshop equipment when made available (i.e. quick service trolley e.t.c.) for physically challenged person would enhance the effective participation and contribution of the physically challenged persons to work freely and efficiently in the automobile industries. Based on the findings, its recommended that the Industrial Training Fund (ITF) National Apprenticeship scheme should be made functional by establishing one model vocational training centre in each local government area, The government should try and ensure that rehabilitation and vocational centres are well equipped with adequate facilities for the physically challenged persons by giving enough funds and The government should take measure to ensure that persons with disabilities have equal employment opportunities in the automobile industries.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Man was created perfectly by God from the beginning but the carelessness of man brought about physical disabilities. The causes are not certain yet but it is known that polio, improper medical attention for expecting mothers and the after effect of the first and Second World Wars are some of the major causes of physical disabilities. Physically challenged person as described by Kershaw (1994) is a person who suffers from disability and this disability because of its nature or degree places the person in that same circumstance. A physically challenged person is a person who differs from the average or normal person in mental characteristics, sensory, abilities, communication abilities, social behaviour and physical characteristics. This difference must be to such an extent that the person requires modification of special training services to develop a maximum capacity (Kirk and Galliper, 1989).

Lawal-Solarin (2010) in an article titled Banks and the Physically Challenged quoted MSN Encarta Dictionary which defines physically challenged as an inability to perform some or all the tasks of daily life or a medically diagnosed condition that makes it difficult to engage in the activities of daily life.

According to the World Book Encyclopaedia (2004), "some people are born with disabilities, while others develop them later in life. There are however, many types of challenges or disabilities; both physical and mental, and they vary greatly in causes, degrees and

treatments. Common disabilities include blindness, deafness, and deformity, loss of limbs, mental illness, mental retardation, muscular, nervous and sensory disorders.

Physical challenge in an individual is lack of ability relative to a personal or group standard or spectrum. Disability may involve physical impairment, sensory impairment, physically challenge. A handicap refers to persons who defers in some ways from what the society regard as normal. He is either a disability that makes learning approaches tedious or has understanding high achievement ability that is; insufficiently challenged in the regular training routine. Ozoji (1990) categorized physically challenged person into five groups on the basis of their physical and mental characteristics which includes mentally physically challenged, sensory physically challenged, communication physically challenged, multiple physically challenged and physically challenged.

The physically challenged person as stated above learn and assimilates at different rates and each has a special learning need which makes both learning and training through the conventional approaches insufficiently challenging, as such, this constitute the special needs that the physically challenged person has and need to overcome (Ozoji, 1990).

National policy on education (2004) reported that special education is the education of children and adults who have learning difficulty because of different sorts of handicaps: partial sightedness, deafness, hardness of hearing, mental retardation, social maladjustment, and physical handicap, due to circumstances of birth, inheritance, social position, mental and physical health pattern or accident in later life. The purpose and objective of special education is to give concrete meaning to idea of actualizing educational opportunities for all children, their physical, mental and emotional disabilities notwithstanding, to provide adequate education for all handicapped children and adults in order that they may fully play their role in the development of the nation and to provide opportunities for exceptionally

gifted children to develop at their own pace in the interest of the nation's economic and technological development (Ozoji, 1990).

Fadaiye (1995) identified five fundamental issues involved in provision of jobs for exceptional persons; lack of functional education, transparent discrimination practices in matter of employment prevailing economic situation in the country, lack of effective legislation and poor transportation system. Perhaps the most significant of these issues is limited vocational training stressing the significance of securing job after training a disabled person. Giwa (1993) stated that the most remarkable integration is achieved when physically challenged person get job after going through vocational training.

Vocational education is any form of education whose primary purpose is to prepare persons for employment (Okoro, 1993). Vocational training focuses on a practical application of skills learnt and is generally unconcerned with theory or traditional academic skills. Vocational training offers training for specific jobs in various fields such as Electrical Electronics, Metalwork, and Automobile amongst others to prepare one to take a high paying skilled job immediately after graduation in different companies. Industries are rapidly growing in sophistication and employers are increasingly looking for workers who have completed a formal training programme in vocational schools and non formal apprenticeship programme (Okoro, 1993).

The non - formal apprenticeship training is an organized system of providing people with manipulative skills and technical or theoretical knowledge needed for competent performance in skilled occupations (Osuala, 1981). The non-formal apprenticeship programme is usually handled by established institutions like: the rehabilitation centres, the National Directorate of Employment (NDE) and the vocational training centres, these programmes are conducted in a manner that its completion is certified. Training given by road side mechanics, electricians,

carpenters and photographers are examples of non formal apprenticeship programmes. The national open apprenticeship scheme, school on wheels and disable work scheme all organized by the National Directorate of Employment (NDE) is examples of formal apprenticeship programme (Giwa, 1993).

National Directorate of Employment (NDE) is a directorate meant to reduce poverty and crime in the society by creating job opportunities of different interests to the dependants and teaming Nigeria youths. A close examination has shown that the number of physically challenged persons in Kaduna metropolis is increasing daily thereby compounding the social problems. Rehabilitation can provide meaning for their lives in addition to relief financial stress, the humiliation of being unable to carry on an acceptable social role, more so the society will be free of beggars and destitute thereby giving Kaduna and the nation more prestige. The importance of rehabilitation cannot be over emphasized, for example the situation in the Nigeria civil war (1967) after the war, some part of the nation was affected with refugees, orphans, widows, handicaps and disability of various forms. However, the step taken to ameliorate the situation was rehabilitation in some of the affected region so that they can be self reliance rather than being dependent (Giwa, 1993).

Nevertheless, there is no doubt that in every disability, there is ability. As such, the physically challenged persons are not useless; they are of worth and unique in their own way and have a significant role to play in all facet of our national life. If disabled persons are actively involved in vocational training, it gives them the opportunity of gaining employment in any skill based industry.

However, Automobile industry is one of the most challenging industries that are involved in the design, development, manufacture, marketing and sale of motor vehicle. Their continuous desire to develop new technologies and innovative products to meet consumers taste provide

a competitive edge in maintaining profit over the long term. Car buyers are looking for new features such as navigation tools, in-car telematics, entertainment options and safety improvements, but resist paying premiums for these advancements. Yet, given the cost and pricing pressures, hence, automotive companies are finding all possible means of exploration towards its success (Spencer, 2006). It therefore requires an individual, able or disabled to possess an exceptional competency to gain employment in automobile industries.

1.2 Statement of the Problem

In Nigeria and many other African countries, little information exists about the solution to the problem of physically challenged people despite their paramount importance. For many years, unemployment has dominated the physically challenged persons. Centre for Law Enforcement Education (Cleen, 2004) reported that people with disabilities are the least cared for and they experience widespread discrimination from their families and the Nigerian society in general. At first glance, it seems like people with physical disabilities have a heavy psychological burden due to social deprivation coupled with their struggle for economic survival. This initial perception fails to take into account because people believe that the physically challenged persons just like the normal human being is expected to have acquired adequate training or skill that will enable him/her to be able to employ others and he / she should be able to function effectively and actively when employed in the country. If we continue to believe that the physically challenged persons are those who differ from the average or normal person in mental characteristics, sensory abilities, social behaviour and physical characteristics, we will continue to have trouble with the problem of unemployment (Kirk and Galliper, 1989).

Unemployment demoralizes human life; the physically challenged persons go through numerous humiliations in the area of gaining employment. It is however sad that physically

challenged persons hardly get employed in the automobile industries due to the discrimination they suffer from the society. Hence, the need for this study is aimed at training of physically challenged persons for gainful employment in Automobile Industries, a case study of Special Education and Rehabilitation Centre, Kakauri-Kaduna, Kaduna State.

1.3 Purpose of the Study

The main purpose of the study is to identify the modalities for the training of physically challenged persons for gainful employment in Automobile Industries in Kaduna state. Specifically, the study focused on the following objectives;

- To identify the competency skills needed in automobile technology for the effective functioning of physically challenged persons in the automobile industries.
- To find out the performance level of the physically challenged individuals in the automobile industries.
- To find out whether there are adequate facilities for the acquisition of needed skills by physically challenged persons.

1.4 Significance of the Study

This research work will be of immense benefit to the physically challenged persons, automobile industries, the State government, rehabilitation centre and the society at large. The physically challenged persons especially the cripples will benefit from the research if the findings are properly utilized as many disabled individuals will be taken off the streets. Automobile skilled personnel's produced after implementing the recommendations may be used to feed the growing industries in the State.

The government will also benefit from this research as there will be significant reduction in the population of unemployed individuals in the streets.

The Rehabilitation Centre's will benefit from this research as it will help them in getting the necessary information's needed to help the physically challenged persons to get gainful employment.

The society at large will greatly benefit from the findings of the study if properly utilized as there will be less physically challenged persons begging on the street.

1.5 Scope of the Study

The scope of this study is limited to the various skills and techniques required in automobile technology industry for the effective functioning of physically challenged persons in Kakuri rehabilitation centre Kaduna, Kaduna State.

1.6 Assumptions of the Study

The following assumptions were inherent in this study:

1. The master craftsmen and the physically challenged persons in the formal and non-formal apprenticeship programme can provide answers to the research question of this study.
2. The utilization of questionnaires will be adequate and suitable for the collection of necessary data for the study.

1.7 Research Questions

The study intends to find answers to the following questions;

- What are the competency skills needed in Automobile Technology for the effective functioning of the physically challenged persons in Automobile Industries?
- What is the performance level of physically challenged person in the Automobile Industries?

- What are the facilities needed for the training of the physically challenged individuals in automobile industries?

1.8 Hypothesis

The following null hypothesis were formulated and tested at 0.05 level of significance:

HO1: There is no significance difference between the mean response of the master craftsmen and the physically challenged persons as regards needed competency skills in Automobile Technology for the effective functioning of the physically challenged persons in Automobile Industries.

HO2: There is no significant difference between the mean responses of the master Craftsmen and the physically challenged persons as regards the facilities needed for the training of the physically challenged individuals in automobile industries?

CHAPTER TWO

2.0 LITERATURE REVIEW

The chapter reviews the literatures relevant to this study under the following sub-headings;

1. Historical Background of the Rehabilitation of Physically Challenged Persons.
 - Historical Background of Automobile Industry.
 - Vocational Training of Physically Challenged Person.
 - Reasons for Promoting Training among the Disabled
2. Historical Background of the Rehabilitation Centre, Kakuri Kaduna State.
3. Competency Skills needed in Automobile Industries by Physically Challenged Persons.
4. The performance level of the Physically Challenged Individuals in Auto Industries.
5. Facilities needed for the Training of Physically Challenged Persons for Skill Acquisition.
6. Summary of Literature Review.

2.1 Historical Background of the Rehabilitation of Physically Challenged Persons

The development of any nation lies solemnly on the working functioning units of its society. The government must therefore create an enabling environment which will provide equal opportunity to every citizen including the physically challenged persons to contribute actively to the societal growth and not to be an object of worries or burden to other individuals or government.

Disability is very common worldwide. The World Health Organization (WHO) estimated that about 500 million people live with disability worldwide, with about 75% living in the developing countries (Lang and Upah, 2008). In Nigeria, WHO estimates put the number of people with disability at 19 million or approximately 20% of the country's population (Lang

and Upah, 2008). There are no credible and robust statistics in Nigeria about most things, including disability. There is therefore a big knowledge gap that needs to be bridged.

Prior to the 1970s, persons with physical, developmental, and mental disabilities who were not cared for by family members were cared for in large institutions like state hospitals and training centers. During the 1970s and 1980s, California and other states recognized that these institutions had become “warehouses” that segregated children and adults with special needs from their communities. There were horror stories about the treatment of many residents. In addition, a large number of individuals did not need the extremely costly level of care provided in an institution. Instead, they could more effectively learn life skills and function, with services and support, in a family-like environment within the community (Adedibu and Jelili, 2011).

Physically challenged persons have traditionally been seen as 'cases' to be 'cured' by medical interventions, failing which they are referred to welfare departments for 'care' (Philpott and McLaren, 1997). Or they are considered in need of 'protection' and charitable handouts (Ho, 1997), a paternalism which creates dependence (Jayasooria *et al.*, 1997). However, this has begun to change over the last few decades, as governments and international institutions now widely recognize that disability is both a human rights and development issue (Jones *et al.*, 2002).

An important international instrument to promote the rights of disabled people is the UN Standard Rules for the Equalization of Opportunities for Disabled Persons (UN, 1993). Although not legally binding, the Standard Rules provide a globally recognized framework upon which governments can formulate rights-based on disability legislation and policies.

The International Year of Disabled Persons in 1982 was followed by the International Decade of Disabled Persons, which put disability rights issues firmly on the agenda of many

countries. In recognition of the lack of progress made in the Asia Pacific region, however, the UN Economic and Social Commission for Asia and the Pacific (UNESCAP) followed this with an Asian and Pacific Decade from 1993 to 2002 and its own regionally relevant Agenda for Action. A second Asia Pacific Decade has now been agreed, to build on the achievements of the first. An African Decade is also now under way (Pan African Conference, 2002), and in the Middle East, a decade is being proposed to the Arab League. (Jones *et al.*, 2002)

A further useful instrument which is legally binding on signatories is the UN Convention on the Rights of the Child (UNCRC), where 'all rights apply to all children without exception' (UNCRC, 1989, Article 2). The Convention can potentially provide a valuable framework to monitor the rights of disabled children (Lansdown, 2001).

Current progress towards a UN Convention on the Rights of Disabled People received a boost in November 2001. A UN resolution established an Ad Hoc Committee which would 'consider proposals for a comprehensive and integral international convention to protect and promote the rights and dignity of persons with disabilities' (UN, 2001).

On 30th March, 2007 the Government of Nigeria signed the UN Convention on the rights of persons with disabilities. Two bills have been introduced into National Assembly; yet, no disability discrimination legislation has been enacted within Nigeria. Also, the common view, held by policy makers and the public at large, is that disabled people and disability issues are Charity and Welfare matters and not Human rights (DFID, 2008).

There was also a decree promulgated in 1993 to enhance the social and societal position of people with disability. Nigerians living with disability are no better off when compared with others living in other parts of the developing world, in terms of the challenges they face, they are poor, marginalized and excluded (Lang and Upah, 2008). Despite the declaration of full

participation in the disability agenda of the United Nations by the Nigerian government, Nigerians with disabilities are still faced with lots of challenges (Michailakis, 1997).

Findings also revealed that disabled people in Nigeria are living in an environment that is hostile to their yearnings and aspiration (Okoli, 2010).

A recent review of disability issues in Nigeria identified many factors why the disability agenda continues to suffer. Notable among them were: the absence of disability discrimination laws, lack of social protection, poor understanding of disability issues by the public, and poor access to rehabilitation services. The report recommended, among others, the collection of robust and reliable data, and advocacy for the passage of the disability bill into law (Lang and Upah, 2008).

2.1.1 Historical Background of Automobile Industry

The evolution of the automotive industry has been influenced by various innovations in fuels, vehicle components, societal infrastructure and manufacturing practices, as well as changes in markets, suppliers and business structures. Some historians cite examples as early as the year 1600 of sail-mounted carriages as the first vehicles to be propelled by something other than animals or humans. However, it is believed by most historians that the key starting point for the automobile was the development of the engine. The engine was developed as a result of discovering new energy carrying mediums, such as steam in the 1700s and new fuels, such as gas and gasoline in the 1800s. Shortly after the invention of the 4-stroke internal combustion gasoline-fueled engine in 1876, the development of the first motor vehicles and establishment of first automotive firms in Europe and America occurred (Donald *et al.*, 2005).

During the 1890s and early 1900s, developments of other technologies, such as the steering wheel and floor-mounted accelerator, sped up the development of the automotive industry by making vehicles easier to use. During the 1910s, the development of technologies and societal infrastructure continued in addition to new manufacturing practices and business strategies. In the 1930s, several new vehicle brands were developed (e.g., Ford Mercury, Lincoln Continental, Volkswagen) and trends in vehicle consumer preferences were established that differentiated the American and European market. In the U.S. market, consumers preferred luxurious and powerful cars, whereas in Europe consumers preferred smaller and low-priced cars (Donald *et al.*, 2005).

In the 1940s, during World War II (WWII), automotive factories were used to make military vehicles and weapons, thus halting civilian vehicle production. After WWII, the economies of most European and some Asian-pacific countries, such as Japan, were decimated; this required the development of new production and business strategies such as those of Toyota.

Another significant paradigm of the 1980s was the global nature of vehicle manufacturing. Automakers started assembling vehicles around the world. This trend was accelerated in the 1990s with the construction of overseas facilities and mergers between multinational automakers. This global expansion gave automakers a greater capacity to infiltrate new markets quickly and at lower costs. Consumers now wanted a vehicle that was personalizable, inexpensive, reliable and quickly obtainable. Consumers desired vehicles that were less harmful to the environment, which led to the introduction of hybrid vehicles by Japanese automakers in the late 1990s.

In the current decade, the recent trend of increasing sophistication and empowerment of the consumer has led automakers to identify new and more specialized markets within saturated markets with diverse customer bases, such as that of the U.S. Another trend is to infiltrate

new emerging markets such as Southeast Asia and Latin America, which has further motivated the establishment of production facilities overseas and the establishment of global alliances and commercial strategic partnerships with foreign automakers. Of these new markets, China appears to be the most promising (Donald *et al.*, 2005).

Literature also reveals that in 2007, more than 72 million motor vehicle, including cars and commercial vehicle were produced worldwide. In this same year, 17 million new automobiles were sold in the US, 16 million in Western Europe, 8 million in China and 2 million in India.

There are approximately 244 million vehicles in operation in the United States. Around the world, there are about 806 million cars and light trucks on the road in 2007 by 2020, the predicted number of cars worldwide will reach 1 billion. Currently, these vehicles burn nearly 260 billion gallons of fuel yearly (Spencer, 2006).

In Nigeria, Car manufacturing has failed a couple of times. The primary reason for this is the lack of adequate technology to manufacture locally made vehicles and the near absence of encouraging indicators that will promote transfer of the much needed technology for local use. This has been attributed to the very harsh operating environment with the state of infrastructure very deplorable especially electricity supply and high cost of production due mainly to importation of needed raw materials from overseas countries and the failure of the Nigerian steel making company; Ajaokuta Rolling Mills to take off successfully. Car manufacturing and assembly have been too risky a business for investors to pursue in Nigeria (Austin, 2012).

However, Nigeria has only one reputable car assembling company which is Peugeot Automobile Nigeria Ltd (PAN), on the other hand is doing extremely well with Major car dealers found in the most exotic parts of the country. PAN has a base in Kaduna State and continue to provide employment opportunity to Nigerians.

2.1.2 Vocational Training of Physically Challenged Persons

In recent years, volumes of different types of reports have been produced on disability issues. Seminars, workshops and conferences have been held to discuss the positive way forward on how to improve education and training for the benefit of disabled people. In some of the countries in Africa; Ministries of Education created departments or units of special education to cater for the needs of disabled students. Even some of the mosque and church based organizations established schools for specialized education for disabled children. In fact one of the Millennium Development Goals (MDG) is education for all by 2015 (MDG, 2015).

The United Nations Declaration on Human Rights declared that, “every child has a right to education to ensure their growth and development, to fulfill their individual potential”. From this background, SAFOD which is a regional network of disabled people’s organizations (DPOs) mandated itself to find out whether disabled people are accorded that right to education and training, hence the study was promoted. It is infact fulfilling its number one objective of “changing lives of disabled people” at the same time recognizing the value of advocacy and embarking on research activities in order to improve the lives of disabled people (Gwitimah, 2008).

UNESCO’s global monitoring report on education for all (EFA) published in 2007 estimated that 77 million children (aged 6 – 11years) do not attend school and that approximately one-third of these out-of-school children are disabled. The other two thirds are said to be children from poor families who live in poor households and whose parents have no education. The above assertion follows up the World Summit for Children in 1990 and the adoption of the UN Convention on the rights of the child which states that more than 155 countries have developed National Programmes of Action. But despite all this international activity, few of the necessary changes in promoting education and training of disabled people have been

made. It is of great importance to note that failure to address the barriers make it difficult for disabled children to access education and training easily. Policies enacted by governments remained on paper and were never implemented, despite the concern that education should be accorded to all (Gwitimah, 2008). If ever good education is to be promoted, there should be deliberate foci on relevant policies that concern themselves with “right to access an inclusive quality, free primary and secondary education on an equal basis with others in the communities in which disabled people live” (UN Convention on Human Rights Article 24).

Work in the field revealed a lot of issues that the experiences of disabled are surely not rosy. Promotion of education and training despite the policies enacted takes long to come out of the ground. This fact actually addresses what James Wolfensohm (2002) former President of the World Bank stated that, “the UN Millennium Development Goals on disability issues would not be met unless deliberate effort is made by all Governments to seriously implement the white paper policies. The UN special reporter (1999) stated that the condition of persons with disabilities is all about “exclusion”. He quipped that, to disabled people’s “human rights” seem to be “human wrongs”, thus every time a disabled child is denied the opportunity to go to school, he or she is excluded (Gwitimah, 2008).

2.1.3 Reasons for Promoting Training among the Disabled

Physically challenged or handicapped individual is required to face the people having different attitudes and views about them. These views and attitudes may be favorable or unfavorable for them. The attitudes and behavior of these people are very important for disabled person. These can lead to the healthy development of the handicapped person or the life of isolation, depression and frustration (Irfana and Muhammad, 2010).

In the same report by Irfana and Muhammad (2010), disability has many meanings to others, when the handicapped person enters a social situation, he does not know whether he will be

an object of curiosity, be sympathized with, helped, pitied, avoided or completely rejected. In different situations handicapped person is rarely treated as a normal human being. Very often, he is identified with the disability and is reacted in terms of whatever the disability means to other person. This discrimination creates not only the adjustment problems for handicapped persons, but also creates a bad impact of the society.

Physically challenged persons however are already very sensitive to their disability, so if people also make fun of them, then it's really very much difficult for them to act like normal person in the society. As a society prospers only if it's all units work properly and effectively at their working places, so disabled also being the important unit of the society can make it going more fluently and smoothly if they find favourable and proper working environment for them. Otherwise, they would be only a burden to the family, society and their country. So in these circumstances a need occurs for the authorities and working people/NGOs to explore the adjustment problems of the handicapped and take effective steps to solve their problems, so that they can also become the effective working unit of the society (Irfana and Muhammad, 2010).

Furthermore, rehabilitating the life and condition of physical challenged person give them the handful opportunity of employment. Rehabilitation leads to self-respect and improve the personality and social adjustment of disabled person, it eliminate their despairs, worries, grief, frustration and bitterness (Bitter, 1972).

2.2 Historical Background of the Rehabilitation Centre, Kakuri-Kaduna, Kaduna State

With particular reference to Kaduna State, the care for handicapped persons started as a private initiative in 1945. An orphanage home was established which cared for destitute. In the year 1970, the Kaduna State Government became fully involved in the care of the disabled which gave birth to a commission known as Rehabilitation commission and

committee for disabled persons. This commission later metamorphosed into a Rehabilitation Centre in the year 1979, during the civilian administration of Alh. Abdulkadir Balarabe Musa with the view to enhancing the productive contribution and social wellbeing of the disabled who are stakeholders in matters and decisions of the society. Activities of this Centre are directed by the Kaduna State Rehabilitation Board (headed by an Executive Director). The Rehabilitation Board was established by Edict No.6 of 1987 under the ministry of mainstream of the society (John, 2011).

2.2.1 Aim and Objectives of the Centre

Cardinally, the Centre was established to train trainable disabled persons in different vocational skills in order to help them recover and rediscover themselves viz-a-viz prepare them for productive livelihood, self-reliance, effective health care and re-integrate them into the mainstream of the society.

2.2.2 Administration of the Centre

The centre is headed by a centre manager who must be a senior officer and a professional in Special Education and Rehabilitation, social welfare and or other very relevant disciplines. The centre manager is assisted in running the administration of the centre by a Deputy Centre Manager. Basically, there are four main divisions in the centre Medical Rehabilitation unit, Welfare Section, Administration and the Clinic Unit headed by senior officers who are professionals in their various fields.

John (2011) in a report stated that even though some of these personnel are not available in some units, it follows that provision is made in such a way that the Physiotherapist, Occupational Therapist, Speech Pathologist, Audiologist, Braille Instructors, Medical Social Workers Prosthetics and Orthotics are responsible to the Senior Medical Rehabilitation

officer. Whereas the welfare, planning and related service are answerable to the chief social welfare officer, the senior supervisor oversees the administration, Trades and Vocational units. In some vein, the senior medical director or senior nurse oversees the clinic unit. There are other supportive and non-technical staffs at the Centre. (John 2011)

2.2.3 Admission Policy

Admission into the centre is done annually. Prospective trainees must be obtained the intake form which they fill and take it to the chairman/secretary of the local government for endorsement or by any sponsoring/recommending institution or individual. The intake form is free. The training is tuition fee free. Admission is opened to both male and female trainees and private candidates within the age bracket of 15 and 45 years. Prospective trainees must be certified medically fit for the training by a Medical Doctor. Medical certificates of fitness from a government hospital must be attached. Prospective trainees must not have any criminal records or pending criminal cases and must be of sound character (John, 2011).

2.2.4 Capacity of the Centre

The centre has the capacity of accommodating 500 students at a time. Presently, only 200 are on training.

2.2.5 Duration of Training

The training is expected to last for 3 years but some trainees spend up to five or even 6 years because of the peculiarity or their disabilities and slow learning (John, 2011).

2.2.6 Vocational Training Skills

Clients are trained in the following skills / trades: tailoring, knitting, shoe making, welding, weaving, tie and dye/batik, cosmetics, carpentry, animal husbandry and saloon (barbing and hair dressing). These trades have their various workshops training hours.

2.2.7 Training Time Table

The centre opens for training at 07.55 AM and closes at 2.00 PM.

2.2.8 Academic Activities

Some of the trainees seek for admission after becoming incapacitated latter in life while in primary school and others while in secondary school. Therefore, the center runs academic activities using the conventional school curriculum for primary and junior secondary school. For those who have not been to school at all but have the capacity to benefit from educational programme, they go into the full time primary school programme, while those who had to drop out of school at the onset of disability and who have the capacity to benefit from educational programme, go through the junior secondary school programme (JSS 1 - III). Thereafter, those who make it are admitted into senior secondary school under a special arrangement with the state Ministry of Education from there, some proceed to the University and other tertiary institutions (John, 2011).

2.2.9 Computer Training

The center has a Computer class with special (talking) Computer for the visual impaired or blind students where they learn computer.

2.2.10 Categories of Student Admitted

The following categories of clients are admitted into the Center:

- The physical Handicapped
- The visual Handicapped
- The Hearing Handicapped
- The Mild Mentally Retarded

2.2.11 Welfare/Medical Services

The center has a functional clinic which provides medical services to the clients. Serious medical cases are referred to the Government Hospital where treatment is done free.

2.2.12 Feeding

As a boarding institutions, trainees are provided hostel accommodation (separately i.e. males and females) and provided three square meals per day free at the expense of the State Government.

2.2.13 Religious Activities

Student have separate places of worship for Christians and Muslim. There is a Mosque for the Muslims and chapel is being constructed for the Christians. In the interim the Christians students use one the classrooms for theirs Sunday worship and other weekly activities. There is freedom of worship among the students.

2.2.14 Resettlement

To explore the gains of trainings, the State Government provides training equipments and material (pairing the trainees who have completed training according to their trades) and rents or provides shades for them for self employments.

2.2.15 Problems of the Centre

- Training materials and equipment not enough to meet the need of the students.
- There is need for more personal e.g. professionals, instructors and health personnel to boost the existing staff strength.
- Some structures are dilapidated and need urgent repairs.
- The road network in the Centre needs to be rehabilitated.
- Lack of placement and follow-up service to evaluate the attainment of the goal of Rehabilitation.
- Some parts of the Centre are very bushy and they can harbor snakes and other harmful reptiles. There is need for the grass to be trimmed down for the safety and good health of the students.
- Sporting and recreational facilities are grossly inadequate.
- There is need for more funding for procurement of materials and equipment and other requirements for effective training.
- Incessant power outage and problem of water in the Centre is another serious problem of the Centre.
- The centre needs a bus for conveying students to different locations in and around the state capital whenever the need arises.
- The Training workshops are ill-equipped (John, 2011).

2.3 Competency Skills needed in Automobile Industries by Physically Challenged Persons

Competency holds diversified meaning to individuals from different areas. Its changes depending on the purpose for which it is used. Competencies are the traits which individuals possess in their specialized area, a cluster of related abilities, commitments, knowledge and

skills that enable a person (or an organization) to act effectively in a job or situation. Competence indicates sufficiency of knowledge and skills that enable someone to act in a wide variety of situations. It is a distinguish features that can easily differentiate one person from the other (Gargi *et al.*, 2012).

A competency as described by automotive industry is referred to the creative and innovative knowledge, skills, abilities and personal characteristics as demonstrated by behaviours that are needed to succeed in a job. A set of skills related knowledge and attributes that allow an individual to perform a task or an activity within a specific function or job (Donald *et a.l.*, 2005). They are grouped in three main categories; Managerial, Generic and Technical or Functional (Gargi *et al.*, 2012)

2.3.1 Managerial Competencies

Competencies are considered essential for staff with managerial or supervisory responsibility in any service or programme area, including automobile industry. Managerial competencies are more relevant for specific occupation; however they are applied horizontally across the organization. The managerial competencies expected as a senior staff or director in automobile industries include:-

- Strategic thinking and scenario-building
- Analysis, problem-solving and decision making
- Planning and organizing
- Team Leadership
- Information Management
- Innovation and Creation
- Mediation and Negotiation
- Mentoring and Coaching

- Presentation and Public Speaking

2.3.2 Technical / Functioning Competency

Technical competencies are specific competency which is considered essential to perform specific job in an organization. This skill includes the ability to use and handle tools, equipments and machineries effectively (Gargi *et al.*, 2012).

Automobile industry as reveal earlier is a very challenging and competitive industry, therefore, it requires that individual's is active in the proper use and handling of tools, equipments and even machineries in order to be fit with fast growing new technology industry.

Functioning competencies skills needed in automobile industries could broadly be categories as listed below:

- The ability to provide maintenance and repair services in automobile engine and other station services for automobile vehicle
- The ability to refurbish and handle other auto electrical services based on the technological advancement.

Automobile repairs and maintenance services as described according to National Board for Technical Education (NBTE, 2001) includes the testing, diagnoses services and repair of any fault relating to conventional motor vehicle assembly which aimed at manufacturer and customers satisfactions. This also covers the workshop practices that focused on the principles of operation of automobile to enhance the technician ability to test to detect faults, rebuild and replace the injector nozzles, Dismantle and reassemble a carburetor while following the operational manure. Fault codes indicate something is not operating within manufacturer benchmarked standards. The technician gets the code readouts and then uses an online computer to look up the description of the problems which the fault codes documents.

The goal is to repair the auto in a way that component once again operate within established standards.

The automobile mechanics must be able to handle the sophisticated diagnostic equipment on their mobile repair vans. The mechanics attend state certified apprenticeship training programmes and spend many additional hours in training workshops in order to stay current technological advances. As a member of VACC, mobile has access to the most current technical auto repair information available in the industry.

Mobile mechanics are really technicians in every sense of the word. After many hours of training, they are fully qualified to use the computer diagnostic equipment which includes that needed to evaluate braking systems, transmissions, air conditioning units, electronic components, electrical systems onboard upgrades such as global positioning systems, ignition systems, fuel injection system and emission control system. The diagnoses of common tyres, wheels and wheel bearing problems including the removal and replacement of axles, bearing and seals are also categorized as the functioning or technical skills needed to be acquired by the disabled automobile personnel to convince the customer satisfaction.

The ability to refurbish and handle other auto electrical services based on the technological advancement are paramount technological skills required for automobile technicians. The days of the garage mechanic are numbered except when working on older cars diagnosed before engine diagnostic computerization was available. All required is to look under the hood and realize many things faulty and needed to be changed thereby access the components required with specialized tools based on the application of the equipment already acquainted with.

The cause of major changes in cars repairs is the use of electronic and computers. Everything from components to circuit boards to computerized diagnostic equipment is now used

meaning the simple wrench and screwdriver is going the way of the dinosaurs. Yet hand tools are used but they are specially designed to fit into odd angled components and many now provide digital readout. But of all radical changes in car repairs services is the use of mobile diagnostic equipment like that found on the mobile vans. What was once only possible in a repair workshop using large bulky machinery can now be done by plugging mobile computerized equipment into the car in order to get readout of the problem, this will enable the disable people to efficiently be useful into the automobile industries (Jürgen and Philine, 2003).

There is a variety of diagnostic equipment used in roadside or on-the-spot testing including mechanical, electrical, component, transmission and air conditioning equipment which test for malfunctions. The equipment produces fault codes which are equivalent of your car “talking” to the mechanic. Hence getting codes and knowing what to do with those codes are two very different things. The codes are simply clues to the problems and must be matched to the comprehensive set of code descriptions available in soft ware programmes. The mobile mechanic is a fully qualified and highly trained service technician who spends many hours learning how to successfully operate the diagnostic equipment and interpret the results. Auto mechanic is like detectives looking for the culprit wreaking havoc in the car. Tracking the problem means first testing the components and systems and then isolating the specific problem. Testing includes using both hand-held and mobile van installed diagnostic computers.

Computers are so integrated into the auto manufacturing and repairs industry, that diagnostic equipment is now designed to fit on the mobile vans or in handheld tools. This means that the mobile mechanic who shows up to repair your vehicle is bringing the equivalent of a large service workshop right to your car. But even more importantly is that your mechanic is highly

competent VACC member and can quickly and accurately diagnose the problem with your car or van non-destructively.

The changes in components will have an effect on the production methods used (Figure 2.1). Particularly those production methods required in the combustion engine (because of strain due to temperature and rotation, such as die casting, grinding and honing), will only be necessary to a smaller extent in fuel cell drive systems. Other technologies will grow in importance, for example, punching could be used in the production of the stacks for the fuel cell and the gas production unit.

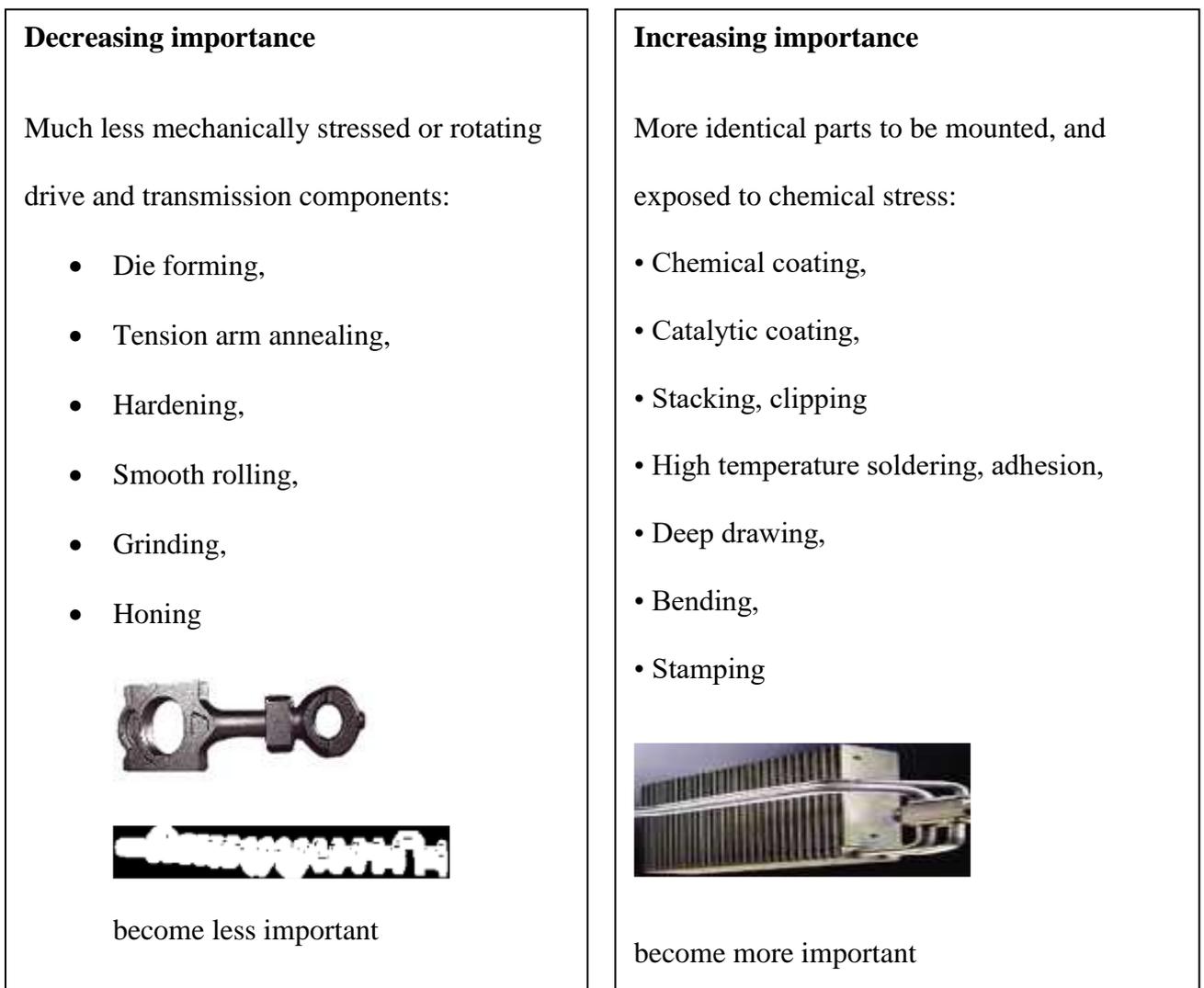


Figure 2.1: Changes in Manufacturing Technologies Due to Fuel Cell Technology

Sources: (Jürgen and Philine, 2003).

The technology trends that were described are influencing changes in the demands on skills and competencies. It is obvious that the increasing need for simultaneous optimization of materials and processes is leading to an increasing demand on the ability of interdisciplinary teamwork and communication skills. This holds for staff at every position in the manufacturing enterprise but especially for research and development personnel. For several reasons this is even more urgent in the automotive sector than in other industries. Because many production steps are done by specialized companies there is a high necessity to communicate between experts from OEMs and suppliers at different levels. The increasing amount of electronic components in cars is demanding an integration of electronics and other design issues. Software concepts have to be integrated and adapted to the hardware needs (Dudenhöffer, 2001).

Several interviewees pointed out that mechatronics which integrates several of these aspects is rather a way of thinking than a specific technology and that the “mechatronics philosophy” needs to be taken up by designers to a larger extent. On the workers level, the handling of electronic components (in automated manufacturing systems as well as in the cars themselves) will require several new skills and competencies. IT knowledge will become still more important and should therefore be integrated in professional education. It seems that at the moment the automotive industry is struggling with these problems on both levels.

Operators need increasingly more training. The engineers have to use simulation programs using 3D. In general, multidisciplinary will be important.

Finally, several interviewees expressed how a high level of basic knowledge will become necessary for all personnel in the automotive industry. Furthermore, it is thought that the ability to solve problems will become more important than a high amount of stored knowledge. It was repeatedly stated that flexible manufacturing processes need intelligent

interfaces between man and machine, which means highly developed man machine interfaces on the one side and highly competent humans on the other. Combining knowledge of different areas is essential to handle multi-material design, teams of specialists are required, communication skills across expertise are important, international thinking is crucial.

2.4 Performance Level of the Physically Challenged Individual in Auto Industries

Research shows little or no significant record on the performance level of physically challenged persons in automobile industry due to the demanding and competitive nature of the industry. However, many factors are serious impediment in the limitation of performance level of physically challenged person.

2.4.1 Psychological/Attitudinal Barriers

The greatest limitation for the performance level of physically challenged people in automobile industry is the negative impression and attitudes of the general public and that of automotive employer towards them (Seeley, 2001). A complex of culture, social and economic norms often pose greater problem for the disabled person than the impairment itself (Gunnarson, 1998). Negative stereotype about the physically challenged person result in discriminatory social policies which in turn reinforce validate negative attitude (UN, 2002). Therefore physically challenged person loss all hope and never make any substantial effort towards gaining employment in competitive industries like the automobiles.

2.4.2 Inadequate Competency skills

The link between poverty and disability is now widely recognized. Poverty makes it more difficult for families to minimize the impact of impairment to the physically challenged person due to lack of sufficient resources to provide the adequate care, training and rehabilitations (Radda *et al.*, 1998). However, the effective training of physically challenged person for competent skill acquisition is very expensive because is required much more

facilities than that of abled person. According to Momoh (1996), vocational training for physically challenged person faced lot of setback due to the simple reason that most of the essential equipment and tools required may need to be modified to suit the condition of the physically challenged persons. Hence, physically challenged persons are strictly restricted in acquiring competent skill needed in automobile industry and therefore, make their performance level insignificant.

2.4.3 Inadequate Infrastructural facilities for Physically Challenged Person in Automobile Industry.

The automobile industry environment is another major factor which affect the performance level of physically challenged person in the view that the installation of basic facilities in the workshop are not designed with the requirement and specification to suit the physically challenged person (Gallon, 1992). South Federal Council on Disability (2001) highlighted some of these social facilities which include the following;-

- i. In accessible entry and exit to workshop in which either training are run or work is to be performed by the prospective employee.
- ii. Lack of accessible toilet inside these building.
- iii. Lack of necessary medical facilities at work sites.
- iv. In accessible road and transport system especially for wheel chairs users.
- v. Lack of necessary modification in equipment and machinery for adopting the same to enable a particular category of disabled person perform a particular operation based on the new technological advancement.
- vi. Absence of sign language interpretation at public places to facilitates communication of people with speech/hearing impairments.

2.5 Facilities needed for the Training of Physically Challenged Persons for Skill Acquisition.

Historically, assistive devices, including Pedestrian environment, specialized mobility services, accessibility to public spaces, recreational and leisure facilities has limited the opportunity for people with disabilities to engage in social and recreational activities. In U.S. Access Board (2004) reported in a study on access to environmental settings among adult wheelchair users, that many people who use wheelchairs were unable to gain access to these facilities because of such barriers as no curb cuts or blocked curb cuts, limited strength or fitness, inaccessible doors and bathrooms, no parking space, poor travel facilities, obstructed travel and wheelchair problems (Meyers *et al.*, 2002). All these are the facilities that are needed to be put in place to standardize the training facilities required for maximum skill acquisition by physically challenged persons. At the same time, the government should provide for coordinated, coherent and consistent professional strategies and a lobbying agenda that focuses on building a strong internal and external alliance to influence policy implementation and enforcement.

In automobile industry however, special facilities for training of physically challenged persons can be broadly classified as;-

- Specialized mobility services
- Accessibility to rehabilitation Services

2.5.1 Specialized Mobility Services

No fixed-route system can meet the needs of all disabled persons. Some disabilities lead to functional impairments which require specialist door-to-door transport. However, government-subsidy on door-to-door services are the norm in North America and Western Europe, where they complement accessible fixed-route services.

However, several number of national standards and guidelines are required by the physically challenged persons as reported by (U.S. Access Board, 2004).

- Footways should be wide enough to allow a wheelchair user and walker to pass one another. A minimum width of 2000mm is recommended and allows two wheelchair users to pass one another. The footway width should increase to 3000mm near bus stops and 3500 in front of shops. The absolute minimum width of clear space, where an obstacle exists, is 1000mm.
- Most guidelines recommend a gradient of 5% (1 in 20). The maximum gradient of a ramp should be 8% (1 in 12). Wheelchair users can only manage steeper gradients over short distances. If a steeper gradient is unavoidable level areas should be provided at 10m intervals so the person can rest.
- Cross falls, which are needed for drainage, should not be more than 2.5% or disabled people have difficulty steering in a straight line.
- A 100mm up stand should be incorporated at the rear of a footway if there is a steep slope or drop to protect wheelchair users and act as tapping rail for long cane users. Fences and guardrails should be at least 1100mm high and colour contrasted from their surroundings.
- Footway should have a level surface to ensure wheelchair users can wheels of a wheelchair.
- The footway should be made of non-slip material. Gratings and covers should also be non-slip and level with the surface.
- Street furniture such as bins, traffic signs and lamp posts should be clearly visible; contrasting with their background and positioned at the edge of the pavement so they do not create an obstacle or hazard for people with disabilities.
- Footways should be kept clear of overhanging trees and bushes.

2.5.2 Accessibility to Rehabilitation Services

Accessibility of services is essential if the goal of fostering functional independence is to be achieved in people with physically challenged persons. Accessibility to rehabilitation services is currently very poor in many developing countries including Nigeria (Lang and Upah, 2008). This shows the importance that the society attaches to people with disability. The fact that it is through rehabilitation that functional independence is restored, makes it liberating to people with disability and indeed important to the society that cares to have a productive citizenry.

However, in the training of physical challenged persons for effective functioning in automobile industry, equipments such as pneumatic fluid extractor, planning machine, auto service unit (automatic operation), head beam aligner, centre hole single acting jack, tyre changers, quick service trolley and two post hoist are required.

- **Pneumatic Fluid Extractor**

A pneumatic fluid extractor is use for draining engine oil, water, fuel and hydraulic fluids from vehicles engines and other mechanical equipment, bleeding brake/clutch fluid and collection of other non-corrosive fluid spillage. High capacity 10 litres fluid reservoir ideal for garage, extension tube storage, used for workshop and on-site use. It is very useful handy garage tool and workshop equipment (Figure 2. 2). This can be supplied with the following specifications:

- i. 1500 x 15mm initial tubing with extension tubes
- ii. 700 x 6mm, 360 x 10mm, 310 x 6mm and 380mm brake bleeder attachment
- iii. Air supply 70 - 110psi (5-8 bar)
- iv. Air consumption 180ltr/min
- v. Vacuum (maximum) 500mm hg

- vi. Extraction rate 2.5 liter/minute
- vii. Air inlet size 1/4" bsp.



Figure 2.2: Pneumatic fluid Extractor
Source: (Indiamart, 2012)

- **Planning Machine**

Heavy Duty double column rack driven motorized planning machine, with suitable HP, AC 440/3/50, 1440 RPM electric motor, starter, complete with single tool post with swiveling head to permit angular cuts with automatic lubrication system (Figure 2.3) is an essential equipment required in an automobile industry to ensure easy operation by the physically challenged persons.

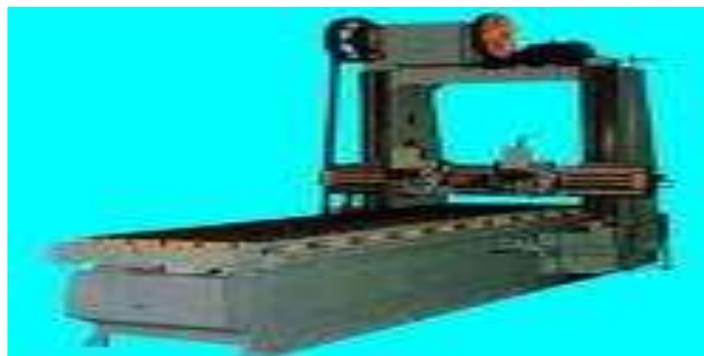


Figure 2.3: Planning Machine
Source: (Indiamart, 2012)

- **Auto Service Unit (Automatic Operation),**

This equipment (Figure 2.4) enable smooth transport of the unit even on rough and uneven surfaces, these units are equipped with two nylon wheels which are used to spray painting. Following are the various parts of the unit: Reciprocating Air Compressor - SKM15, 1.5 HP rating direct coupled, with an FAD of 2cfm, at a maximum working pressure of 10kgf/cm², The compressor unit is highly balanced, fitted with roller bearings for the connecting rod and crank, automotive type piston, and deep finned cylinder and cylinder head, The valves are finger type and the compressor is mounted on 45 liters horizontal air receiver grease Pump m- SKGP 20



Figure 2.4: Auto Service Unit (Automatic Operation)
Source: (Indiamart, 2012)

- **Head Beam Aligner**

The head light beam aligner which requires no power supply and have clear and simple aiming screen. They are quick and simple to use which make it easier to be handled by physically challenged persons in an automobile industry. They are available in two models:

with Lux Metre and without Lux Metre. Depending on the needs of the clients, they can be supplied with extra long rails allowing unit to be wheeled away in drive-through application (Figure 2.5). Also, headlight beam aligner takes little space and requires space of only 500 mm between vehicle Head Lamp and Lens.



Figure 2.5: Head Beam Aligner
Source: (Indiamart, 2012)

- **Centre Hole Single Acting Jack**

This equipment is a qualitative range of centre hole single acting jack that is provided with different types of puller attachments for easy operation. These jacks find application in pulling, pushing and tensioning of cables and pre-stressing in automobile engineering workshop (Figure 2.6). The salient features of these jacks are cited below: Light weight, remote control, plain ram, centre hole spring return, high strength, heat treated body, hard chrome plated ram to resist scoring and corrosion, single acting spring return for smooth lowering, wiper to arrest ingress of foreign particles, bigger center hole for running screws/cables/studs to pull or push forces, High pressure seals and quick change coupler with dust cap.



Figure 2.6: Centre Hole Single Acting Jack
Source: (Indiamart, 2012)

- **Tyre Changers**

The provision of tyre changers that are equipped with bead breaker handles rims extremely gently and safely (Figure 2.7) is also required in an automobile industry for easy operation by physically challenged persons. These tyre changers occupy less space as the side swinging mounting arm enables the user to install it near the wall. When manufactured using A-grade raw material, these tyre changers are acclaimed for their corrosion resistance and long service life.



Figure 2.7: Tyre Changers
Source: (Indiamart, 2012)

- **Quick Service Trolley**

The provision of a wide range of quality quick service trolleys which is designed to carry general tools required for vehicle inspection and maintenance in automobile workshop is also an essential tool required by the physically challenged person to ensure easy movement or carriage of faulty automobile parts or hand tools needed for the servicing of automobiles in general. The quick service trolleys can freely move within a work area and can be locked by one touch of the foot. Apart from this, the trolley also has additional tyre stand, locking and a rotation mechanism which stabilize up the trolley when in use (Indiamart, 2012).

- **Two Post Hoist**

The electro-hydraulic hoist tool designed to meet international standard. The hoists can lift vehicles up to 3.2 tonnes in weight. However, both hoists are tested for much higher loads and are fitted with all the necessary safety features and are best choice for any auto workshop (Indiamart, 2012).

2.6 Summary of Related Literatures

The analysis of the reviewed literatures could be summarized as follows;-

Rehabilitation of physically challenged person is very essential in the development of the society. The government had however formulated several policies in this regards but only few are implemented while others remain only on papers.

The rehabilitation centre Kakuri-Kaduna, Kaduna State is a good centre case study. It has an appreciable number of both trainees and the trainers with conducive training environment.

The evolution of the automotive industry has been influenced by various innovations in fuels, vehicle components, societal infrastructure, and manufacturing practices, as well as changes in markets, suppliers and business structures, thus, creating more employment opportunities.

Performance level of disable people in automobile industries is so low and hence required great support by the government, law enforcement agencies, every individual and firm to integrate the economic development of our nation with respect to technological advancement.

Competency skills needed in automobile industries by physically challenged persons which are the managerial skills and technical or functioning skills has a lot of impact on the improvement of automobile industries in every part of the world.

CHAPTER THREE

3.0 METHODOLOGY

This chapter describes the procedures used in carrying this study under the following; research design, area of study, population, sample, instrument for data collection, validation of instruments, method of data analysis and decision rule.

3.1 Research design

This study employed the use of a case study research design since it was conducted in kakuri rehabilitation centre in Kaduna, Kaduna state.

3.2 Area of the Study

This research covered physically challenged persons and the local craftsmen in kakuri rehabilitation centre in kakuri in kaduna metropolis only.

3.3 Population

The targeted population used for this research comprises of 25 master craft men and 50 physically challenged persons who are residents of Kaduna, Kaduna state. Since the entire population is considerably small, there was no need for sampling. The entire population was be used for the research.

3.4 Instruments for Data Collection

In this research a structured questionnaire developed by the researcher through an extensive review from the review of literatures. It was designed to elicit information from the physically challenged persons and the master craftsmen. The questionnaire contains items organized into three parts:

Part 1- sought for general information on personal data.

Part 2-contains the item of the questionnaire structured into three sections that is; sections A, B and C, the section requires the respondents opinion on the statement to tick (✓) in the column that best describes their opinion on a particular item.

Section A contains 20 items on the skills needed in automobile industries by physically challenged persons.

Section B contains 10 items on the performance level of physically challenged individuals in automobile industries

Section C contains 20 items on the facilities needed in automobile for the training of physically challenged persons for skill acquisition.

3.5 Validation of the Instrument

For the purpose of validating the instrument, copies of the draft questionnaire was given to three lecturers in the Department of Industrial and Technology Education to make necessary modification on the structuring and organization of the item, their suggestions and modification were considered when preparing the final draft of the instrument.

3.6 Administration of Instrument

The researcher with the help of research assistant administered the questionnaire, that is the distribution and collection of the questionnaire was carried out by the researcher and research assistant. This procedure leads to 98% of the return rate of the instrument.

3.7 Method of Analysis

The respondents rated the level of acceptance while they attach to each item on a 4-points rating scale as shown below.

For section A and C:-

Very Highly Needed (V.H.N) = 4 points

Highly Needed (H.N) = 3 points

Moderately Needed (M.N) = 2 points

Not Needed (N.N) = 1 points

For sections B:-

Strongly agreed (S.A) = 4 points

Agreed (A) = 3 points

Disagreed (D) = 2 points

Strongly disagreed (S.D) = 1 point.

In analyzing the data collected, mean, standard deviation and t-test was used to test the research questions while the T-test was used to test the hypothesis.

Mean: summing up the product of the frequency and nominal value of each response option for each item and dividing by the number of respondents to each item.

$$\text{Mean} = \bar{X} = \frac{\sum fx}{N}$$

Where,

\bar{X} = mean of each item

X = nominal value of option

Σ =summation

N =number of items

F =frequency of response to each item.

The standard deviation of each item was computed using the formula

$$S. D \sqrt{\frac{\Sigma f(X - \bar{X})^2}{\Sigma N}}$$

Where,

S.D = standard deviation

X = mean of each item

\bar{X} = grand mean of all items

F = frequency of scores

N = total number of items

Σ = summation.

T-test was used to analyze the mean of each response in the item of the skills needed, performance level and the facilities needed in automobile industries for the training of physically challenged person.

The formula for calculating t-value is:

$$t\text{-test} = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{SD_1^2}{n_1} + \frac{SD_2^2}{n_2}}}$$

Where,

t = test of significance

\bar{X}_1 = Grand mean of group one (1)

\bar{X}_2 = Grand mean of group two (2)

N_1 = Number of respondent in group 1

N_2 = Number of respondent in group 2

SD^2_1 = Variance of group 1 (squared of S.D for group 1)

SD^2_2 = Variance of group 2 (squared of S.D for group 1)

N_1+N_2 = Degree of freedom.

3.8 Decision Rule

To determine the acceptance, a mean score of 2.5 was used as the deciding point between agree and disagree. In other words any response with mean score of 2.5 and above was consider agreed, while responses below mean score of 2.5 was disagreed. For testing hypotheses at t-value of 1.99 at 0.05 level of significant was chosen. So any value that has it t-calculated less or equal to the value was considered accepted and above the t-value was considered rejected.

CHAPTER FOUR

4.0 Presentation and Analysis of Data

This chapter deals with the presentation and analysis of data with respect to the research questions and hypothesis formulated for this study. The result of data analysis for the research questions were presented first follows by those of the hypothesis tested for the study.

4.1 Research Question 1

What are the needed competency skills in Automobile Technology for the effective functioning of the physically challenged persons in Automobile Industries?

Table 4.1: Mean responses of Master craftsmen and physically challenged persons on competency skills needed in Automobile Technology for the effective functioning of the physically challenged persons in Automobile Industries?

		N ₁ = 25 N ₂ = 50			
S/NO	ITEMS	\bar{X}_1	\bar{X}_2	\bar{X}_T	Remarks
1	Understand and interpret the workshop safety rules and procedures	3.76	3.82	3.79	Agreed
2	Identification and proper handling of equipment and tools	3.76	3.78	3.77	Agreed
3	Reviewing work orders and discussing with co-workers or supervisor	3.04	3.58	3.31	Agreed
4	Inspecting motors in operation using testing devices and work experience to diagnose problems	2.76	3.42	3.09	Agreed
5	Dismantle and assemble the carburetor	3.00	3.22	3.11	Agreed
6	Testing and adjusting repaired part to manufacturer specifications	3.08	3.10	3.09	Agreed
7	Advising customers on work performed, general vehicle conditions and future repair requirement	2.72	2.50	2.61	Agreed
8	Repair and replace automotive parts such as brake pad, gear-box, ignition system, fuel pump and steering.	3.20	3.36	3.28	Agreed
9	Dismantling and re-assembling of motor vehicle engine	3.08	3.40	3.24	Agreed
10	Supervision of work progress in workshop	3.16	3.02	3.09	Agreed
11	Diagnose service and repair of any fault relating to conventional motor vehicle	3.36	3.30	3.33	Agreed
12	Drain, flush and refill a cooling system with anti-freeze	2.84	3.60	3.22	Agreed
13	Test, rebuild and replace injector nozzles	3.25	3.60	3.43	Agreed
14	Remove, tests, repair and replace an alternator	3.24	3.50	3.37	Agreed
15	Dismantle, assemble, inspect and adjust manual transmission	3.28	3.24	3.26	Agreed
16	Diagnose all problems relating to steering, braking and suspension systems respectively	3.12	3.44	3.28	Agreed
17	Diagnose common tyres, wheels and wheel bearing problems	2.84	3.74	3.29	Agreed
18	Ability to keep working area tidy	3.40	2.98	3.19	Agreed
19	Remove and replace axles, axle bearings and seals	2.88	3.18	3.03	Agreed
20	Keeping up to date with technological advancement	3.44	3.40	3.42	Agreed

Key

N₁ = number of physically challenged persons

N₂ = number of master craftsmen

\bar{X}_1 = mean of physically challenged persons

X_2 = mean of master craftsmen

X_T = average mean of physically challenged persons and master craftsmen.

The data presented in table 1 reveal that the respondents agreed with all the items with mean scores ranging between 2.61 – 3.79

4.2 Research Question 2

What is the performance level of physically challenged person in the Automobile Industries?

Table 4. 2: Mean Responses of Master Craftsmen on the performance levels of the physically challenged person in the automobile industries.

S/NO	ITEMS	N ₁ = 25 N ₂ = 50			Remarks
		\bar{X}_1	\bar{X}_2	\bar{X}_T	
1	Physically challenged persons are employed in Automobile industries	1.92	2.14	2.03	Disagreed
2	Physically challenged persons can work in automobile industry	3.08	3.16	3.12	Agreed
3	Effective handling of equipment and tools	1.92	2.34	2.13	Disagreed
4	Repair and replace automotive parts such as brake pad, gear-box, ignition system, fuel pump and steering.	1.72	2.54	2.13	Disagreed
5	Good team work with co-workers	2.24	2.62	2.44	Disagreed
6	Good customer- working relationship	2.24	2.68	2.46	Agreed
7	Performing scheduled maintenance service	1.92	2.54	2.23	Disagreed
8	High work confidence by client/customers	1.80	1.78	1.79	Disagreed
9	Testing and adjusting repair parts to manufacturer specification	1.60	2.28	1.94	Disagreed
10	Follow safety procedures	2.32	2.64	2.44	Disagreed

The data presented in Table 2 revealed that the entire respondent agreed while some disagreed with the items mean scores ranging 1.79 – 3.12

4.3 Research Question 3

What are the facilities needed for the training of the physically challenged individuals in automobile industries?

Table 4.3: Mean Responses of Master Craftsmen on the facilities needed in training of the physically challenged individuals in the automobile industries.

S/NO	ITEMS	N ₁ = 25 N ₂ = 50			Remarks
		\bar{X}_1	\bar{X}_2	\bar{X}_T	
1	Easy and freely accessible entry and exist to the workshop	3.96	3.80	3.88	Agreed
2	Specialized transport service and mobility system	3.48	3.54	3.51	Agreed
3	Hydraulic car lift	3.40	3.76	3.58	Agreed
4	Air compressor	3.16	3.44	3.30	Agreed
5	Easy use and accessible toilet in the workshop	2.76	3.44	3.10	Agreed
6	Medical facilities at work sites	3.52	3.76	3.64	Agreed
7	Pneumatic fluid extractor	3.16	3.46	3.31	Agreed
8	Planning machines	2.36	2.54	2.45	Agreed
9	Auto service unit (automatic operation)	2.96	3.26	3.11	Agreed
10	Head beam aligner	3.04	3.34	3.19	Agreed
11	Tyre changers	3.00	3.20	3.10	Agreed
12	Quick Service trolley	3.44	3.38	3.41	Agreed
13	Centre hole single acting jack	2.68	3.08	2.88	Agreed
14	Two post hoist	2.76	3.18	2.97	Agreed
15	Sign language interpreter	1.88	2.32	2.10	Disagreed
16	Furniture such as hand-tool cabinets	2.68	3.04	2.92	Agreed
17	Recreational facilities	3.16	2.62	2.89	Agreed
18	Computer systems for research	2.80	3.04	2.92	Agreed
19	Diagnosing and inspecting machines	3.40	3.28	3.34	Agreed
20	Protective clothing's like gloves, stack boot and goggle	3.88	3.96	3.92	Agreed

The data presented in table 4 revealed that most of the respondents except one (1) agreed with mean scores ranging from 2.10 – 3.92

HYPOTHESIS ONE (HO₁)

There is no significance difference between the mean response of the master craftsmen

and the physically challenged persons as regards needed competency skills in Automobile

Technology for the effective functioning of the physically challenged persons in Automobile

Industries.

Table 4.4: t – tests analysis of Master craftsmen and physically challenged persons on competency skills needed in Automobile Technology for the effective functioning of the physically challenged persons in Automobile Industries.

S/NO	ITEMS			N ₁ = 25 N ₂ = 50		t- Cal	Re- marks
		\bar{X}_1	^{SD} 1	\bar{X}_2	SD ₂		
1	Understand and interpret the workshop safety rules and procedures	3.76	0.65	3.82	0.39	- 0.32	NS
2	Identification and proper handling of equipment and tools	3.76	0.43	3.78	0.42	- 13	NS
3	Reviewing work orders and discussing with co-workers or supervisor	3.04	0.87	3.58	0.57	- 2.16	NS
4	Inspecting motors in operation using testing devices and work experience to diagnose problems	2.76	1.11	3.42	0.64	- 2.13	NS
5	Dismantle and assemble the carburetor	3.00	0.80	3.22	0.82	- 0.79	NS
6	Testing and adjusting repaired part to manufacturer specifications	3.08	0.80	3.10	0.76	- 0.07	NS
7	Advising customers on work performed, general vehicle conditions and future repair requirement	2.72	0.92	2.50	0.85	0.73	NS
8	Repair and replace automotive parts such as brake pad, gear-box, ignition system, fuel pump and steering.	3.20	0.80	3.36	0.59	- 0.67	NS
9	Dismantling and re-assembling of motor vehicle engine	3.08	0.80	3.40	0.67	- 1.28	NS
10	Supervision of work progress in workshop	3.16	0.67	3.02	0.68	0.61	NS
11	Diagnose service and repair of any fault relating to conventional motor vehicle	3.36	0.79	3.30	0.74	0.23	NS
12	Drain, flush and refill a cooling system with anti-freeze	2.84	0.78	3.60	0.70	- 3.04	NS
13	Test, rebuild and replace injector nozzles	3.25	0.75	3.60	0.68	- 1.40	NS
14	Remove, tests, repair and replace an alternator	3.24	0.71	3.50	0.65	- 1.13	NS
15	Dismantle, assemble, inspect and adjust manual transmission	3.28	0.72	3.24	0.72	0.16	NS
16	Diagnose all problems relating to steering, braking and suspension systems respectively	3.12	0.99	3.44	0.61	- 1.14	NS
17	Diagnose common tyres, wheels and wheel bearing problems	2.84	0.74	3.84	0.46	5.00	S
18	Ability to keep working area tidy	3.40	0.85	2.98	0.90	2.05	S
19	Remove and replace axles, axle bearings and seals	2.88	0.91	3.18	0.56	- 1.15	NS
20	Keeping up to date with technological advancement	3.44	0.64	3.40	0.64	0.18	NS

Key

N₁ = Number of apprentices

N₂ = number of master craftsmen

SD₁ = standard deviation of apprentices

SD₂ = standard deviation of master craftsmen

t – Cal = t – calculated. t – Critical (t – table of value) = ± 1.99

\bar{X}_1 = mean of apprentices

\bar{X}_2 = mean of master craftsmen

S = Significant

NS = not significant

df (degree of freedom) = $N_1 + N_2 - 2 = 50 + 25 - 2 = 73$

The analysis in table 4 showed that the t-cal value of all the items were below the t-table value (± 1.99)

Therefore, the null hypothesis was acceptable for each of the items. This implies that there is no significant difference for the items accepted but there were significant difference for the items rejected in the mean rating on what are the needed skills in Automobile Technology for the effective functioning of the physically challenged persons in Automobile Industries in Kaduna metropolis.

HYPOTHESIS TWO (HO₂)

There is no significant difference between the mean responses of the master Craftsmen and the physically challenged as regards the facilities needed for the training of the physically challenged individuals in automobile industries?

Table 4.5: t – tests analysis on the facilities for the acquisition of needed skills by the physically challenged individual in automobile industries.

N₁ = 25 N₂ = 50

S/NO	ITEMS	\bar{X}_1	SD ₁	\bar{X}_2	SD ₂	t- Calc	Remarks
1	Easy and freely accessible entry and exist to the workshop	3.96	0.20	3.80	0.53	- 0.75	NS
2	Specialized transport service and mobility system	3.48	0.70	3.54	0.65	- 0.12	NS
3	Hydraulic car lift	3.40	0.63	3.76	0.43	- 3.86	NS
4	Air compressor	3.16	0.78	3.44	1.52	- 1.04	NS
5	Easy use and accessible toilet in the workshop	2.76	0.81	3.44	0.33	- 4.00	NS
6	Medical facilities at work sites	3.52	0.57	3.76	0.58	- 0.14	NS
7	Pneumatic fluid extractor	3.16	0.67	3.46	0.58	- 1.83	NS
8	Planning machines	2.36	1.13	2.54	1.13	0.57	NS
9	Auto service unit (automatic operation)	2.96	0.96	3.26	0.72	0.45	NS
10	Head beam aligner	3.04	0.66	3.34	0.63	- 5.88	NS
11	Tyre changers	3.00	0.69	3.20	0.83	- 1.33	NS
12	Quick Service trolley	3.44	0.57	3.38	0.57	- 5.43	NS
13	Centre hole single acting jack	2.68	0.97	3.08	0.70	- 1.56	NS
14	Two post hoist	2.76	0.99	3.18	1.06	- 1.04	NS
15	Sign language interpreter	1.88	1.21	2.32	1.24	0.13	NS
16	Furniture such as hand-tool cabinets	2.68	1.11	3.04	0.73	- 1.28	NS
17	Recreational facilities	3.16	0.55	2.62	0.70	3.60	S
18	Computer systems for research	2.80	1.06	3.04	0.83	7.0	S
19	Diagnosing and inspecting machines	3.40	0.57	3.28	0.73	- 2.0	NS
20	Protective clothing's like gloves, stack boot and goggle	3.88	0.32	3.96	0.20	0.57	NS

The analysis in table 5 shows that the t-cal of the items were below the t-table value except for item seventeen (17) and eighteen (18). Therefore, the null hypothesis was rejected for the items while it was accepted for the remaining 18 items. Hence the opinion of the respondents differed in one item but did not in nineteen items relation to the ways to be adopted to enable the physically challenged person to cope with their performance in the automobile industry.

4.5 Findings

Based on the data collected and analyzed in this research work, the following findings were made:

This study revealed how current trend and innovation in automobile industry could enhance the suitability and job security for both the master craft men and physically challenged persons in automobile industry in Kaduna Metropolis.

Both respondents agreed with the followings that:

1. The physically challenged persons should be provided with both the technological advancement equipment and skills (Operation principle) for ease in diagnoses of automobile service and repair of any fault related to the conventional motor vehicle.
2. Vehicle owners believes that physically challenged persons do not have sufficient working experience (lack competency skills) to satisfy their clients in the automobile industry
3. There is great lack of confidence in disabled person in diagnosing all problems relating to automobile repairs (i. e steering, brakes, wheels, bearing and internal combustion engine system repair respectively)
4. Physically challenged persons may find it difficult to tidy the workshop area at all time.

Finding related to the performance level of the physically challenged individuals in the automobile industries, the respondents agreed with the followings

1. Physically challenged persons can work in automobile industry
2. Good customer – working relationship and interaction could enhance the effectiveness of the disabled person in the auto industry,

However, few disagreements were observed with respondent's as followings among others:

1. Physically challenged persons are employed in automobile industry
2. That disable person could be effective in handling of modern equipment and tools.

Findings related to the facilities needed in training of the physically challenged individuals in the automobile industries, the followings are agreed upon by the respondents.

1. Specialized transport service and mobility system which ease movement and accessibility to modern workshop equipment and should be made available (i.e. quick service trolley e.t.c.)
2. Provision of computer systems for research, diagnosing and inspection of machines should be made available to facilitate the effectiveness and efficiency of the disable people in the automobile industries
3. Facilities such as medical, recreational and other protective tools should be provided to physically challenged persons for motivation such facilities includes gloves, safety goggles and stack boots as the case may be.

4.6 Discussion of Findings

The discussions of the findings are based on the research questions raised for the study.

Findings from table 1 of this study confirms that physically challenged persons should be provided with both the technological advancement equipment and skills (Operation principle) for ease in diagnoses of automobile service and repair of any fault related to the conventional motor vehicle. This trend is in agreement with the previous research by Rajput, (2007) who asserted that modern automobile engines are sufficiently complex to discourage even the able professional mechanics because modern vehicles rely on Hi-tech electronics for controlling

almost every system ranging from engine management to entertainment systems and climate control

The findings revealed in table 2 that vehicle owners believe that physically challenged persons do not have sufficient working experience (lack competency skills) to satisfy their clients in the automobile industry. This is in line with Ogwo (2004) who lamented on the insufficient nature of the competency skills possessed by auto mechanics in the informal sector of Nigeria which is characterized by repetition of operations through a recall of previous experiences. In addition, the findings of the study also revealed that there is great lack of confidence in physically challenged persons in diagnosing all problems relating to automobile repairs (i. e steering, brakes, wheels, bearing and internal combustion engine system repair respectively). The study also reveals that physically challenged persons may find it difficult to tidy the workshop area at all time. This also agreed with Ogwo (2004) who lamented that the crude methods, manual tools and equipment used by roadside mechanics usually complicates minor automobile faults or create new problems in the system if not handled by experienced person(s) and that cleanliness in automobile environment would help to reduced accident that might occurred as a result of oil spillage on the workshop floor.

Finding from this study also indicates that disable person could be effective in handling of modern equipment and tools. This is with the findings of Mandell (1986) who pointed out that to physically challenged persons should be prepared to cope with the changes technology brings to automobile industries in term of computer application for easy diagnosis of faulty machines.

Findings in table 3 also revealed that specialized transport service and mobility system which ease movement and accessibility to modern workshop equipment and should be made available (i.e. quick service trolley e.t.c.) for physically challenged persons as these would

enhance the effective participation and contribution of the physically challenged persons to work freely and efficiently in the automobile industries.

Finding in this study also revealed that Provision of computer systems for research, diagnosing and inspection of machines should be made available to facilitate the effectiveness and efficiency of the disable people in the automobile industries. This trend is in agreement with the findings of Mandell, (1986) who stated that physically challenged person should be exposed to computer literacy, operation principles and application to automobile thereby enable them more fit to cope with their performance in the automobile industries.

Finding from this study further revealed that Facilities such as medical, recreational and other protective tools should be provided to physically challenged persons for motivation such facilities includes gloves, safety goggles and stack boots as the case may be. This will also serve as an encouragement and job security for the physically challenged person as they will be rest assured that importance in the industries is also highly recognized.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Study

Physically challenged person is seen as a person who differs in some ways from what the society regards as normal. These disabilities may involve physical impairment, sensory impairment and physically challenged.

The automobile industries today is incorporating new devices and special feature that allows for physically challenged persons to be able to work in the industries effectively.

The doors of employment opportunities are in most instances shut against physically challenged persons because of misinformation about disabilities. There are many negative attitudes emanating from our culture and religious practices on the physically challenged individuals.

This study, however, deals with the training of physically challenged persons for gainful employment in automobile industries in Kaduna, Kaduna State.

The study used a survey research approach to find out the competency skills needed by physically challenged persons for effective function in an automobile industry, performance level of physically challenged persons and the facilities needed in the automobile industries.

Fifty (50) items were generated in the questionnaire to elicit responses from the master crafts men and physically challenged persons. The questionnaires were validated by three (3) lecturers in the department of Industrial Technology Education. A total of 75 validated questionnaires were issued to 25 master craftsmen and 50 to physically challenged persons in Kaduna State.

The instrument for the data collection was analyzed using mean, standard deviation and t – test statistics.

Efforts to tackle factors that cause unemployment of physically challenged persons in automobile industries which threaten their healthy living. It is therefore, worthy to state here that unless these facts are seriously taken into consideration and fully implemented, the physically challenged persons will lose significance and remain unemployed

5.2 Implication of the Study

It could be deduced from this study that innovations in automobile industries will promote job security of physically challenged persons in Kaduna metropolis. This implies that modern technology in automobile industries will greatly increase the performance skills of physically challenged persons in automobile industries.

This findings is also an indication that by designing and retraining the physically challenged persons in every aspect of automobile with respect to the sophisticated available equipment, unemployment level shall reduce to the minimal

5.3 Conclusion

Physically challenged people are persons of all ages, with a severe, permanent or long-term, sometimes congenital or multiple (primarily physical) disabilities that is not primarily the consequence of aging processes. They need different forms of care or assistance. This is related to their personal wishes, the problems they are faced with and the degree to which they are able to manage their own life.

Provision of all required facilities for the physically challenged persons make it not only possible for the physically challenged person to gain employment in the automobile industries but also enable them to be fit and more dedicated to any portion of job assigned to

them in the automobile industries and make them to be relevant to the entire society in general since their security and welfares' is guaranteed.

This study however revealed that the current trend and technological advancement in automobile industries provide opportunities for the physically challenged person to effectively work in Kaduna automobile industries without stress.

Therefore, effort should be made towards redesigning the strategies and employment criterion to suit the physically challenged persons as this will enable them to contribute their quota and improve their competency skills.

5.4 Recommendations

Based on the findings, the following recommendations are made:-

1. Physically challenged persons should attend vocational training centre to obtain practical knowledge that govern the operation of modern vehicle system
2. The industrial training fund (ITF) National Apprenticeship scheme should be made functional by establishing one model vocational training centre in each local government area.
3. The technical skills of master crafts men should be improved upon through short courses at part – time evening schools.
4. The government should try and ensure that rehabilitation and vocational centres are well equipped with adequate facilities for the physically challenged persons by giving enough funds.
5. The government should take measure to ensure that persons with disabilities have equal employment opportunities in the automobile industries.
6. Federal government should set up a technical board to regulate and certify the vocational training offered by apprenticeship programme and quality to ensure standardization and quality control.

5.6 Suggestion for Further Research

Based on the findings in this study, the following suggestions were made for further study:

1. Investigation on the best method of teaching to be adopted by master craftsmen to enable the physically challenged persons acquired modern technological skills to secure their job automobile industries.
2. Development of mechanism with respect to information and technology integration to enhance the performance of physically challenged person in every aspect of automobile industries

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APPENDIX A

APPENDIX B

QUESTIONNAIRE

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE

SCHOOL OF SCIENCE AND SCIENCE EDUCATION

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION

QUESTIONNAIRE FOR TRAINING OF PHYSICALLY CHALLENGED PERSONS FOR GAINFUL EMPLOYMENT IN AUTOMOBILE INDUSTRIES IN KADUNA, KADUNA STATE

PART ONE

INTRODUCTION

Dear Correspondent,

This research work is towards training of the physically challenged persons' for gainful employment in Automobile industries in Kaduna, Kaduna state.

Please kindly complete this questionnaire as faithfully as possible by sincerely ticking (✓) the column that best represents your opinion about the topic. All information provided will be highly confidential and strictly used for the purpose of this research work. Your response will be highly appreciated.

Mastercraft man

Physically challenged person

A four (4) point rating scale is used to indicate your opinion as stated below:-

Section A	Section B	Section C
Very Highly Needed (V.H.N)	Strongly Agreed (S.A)	Very Highly Needed (V.H.N)
Highly Needed (M.H)	Agreed (A)	Highly Needed (M.H)
Moderately Needed (M.N)	Disagree (D)	Moderately Needed (M.N)
Not Needed (NN)	Strongly Disagreed (S.D)	Not Needed (NN)

PART TWO

SECTION A

What are the competency skills needed in automobile technology for the effective functioning of physically challenged persons in the automobile industries?

S/NO	ITEMS	VHN	HN	MN	NN
1	Understand and interpret the workshop safety rules and procedures				
2	Identification and proper handling of equipment and tools				
3	Reviewing work orders and discussing with co-workers or supervisor				
4	Inspecting motors in operation using testing devices and work experience to diagnose problems				
5	Dismantle and assemble the carburetor				
6	Testing and adjusting repaired part to manufacturer specifications				
7	Advising customers on work performed, general vehicle conditions and future repair requirement				
8	Repair and replace automotive parts such as brake pad, gear-box ,ignition system, fuel pump and steering.				
9	Dismantling and re-assembling of motor vehicle engine				
10	Supervision of work progress in workshop				
11	Diagnose service and repair of any fault relating to conventional motor vehicle				

12	Drain, flush and refill a cooling system with anti-freeze				
13	Test, rebuild and replace injector nozzles				
14	Remove, tests, repair and replace an alternator				
15	Dismantle, assemble, inspect and adjust manual transmission				
16	Diagnose all problems relating to steering, braking and suspension systems respectively				
17	Diagnose common tyres, wheels and wheel bearing problems				
18	Ability to keep working area tidy				
19	Remove and replace axles, axle bearings and seals				
20	Keeping up to date with technological advancement				

SECTION B

What are the performance level of the physically challenged individuals in the automobile industries?

S/NO	ITEMS	S.A	A	D	S.D
1	Physically challenged persons are employed in Automobile industries				
2	Physically challenged persons can work in automobile industry				
3	Effective handling of equipment and tools				
4	Repair and replace automotive parts such as				

	brake pad, gear-box ,ignition system, fuel pump and steering.				
5	Good team work with co-workers				
6	Good customer- working relationship				
7	Performing scheduled maintenance service				
8	High work confidence by client/customers				
9	Testing and adjusting repair parts to manufacturer specification				
10	Follow safety procedures				

SECTION C

What are the facilities needed in training of the physically challenged individuals in the automobile industries?

S/NO	ITEMS	VHN	HN	MN	NN
1	Easy and freely accessible entry and exist to the workshop				
2	Specialized transport service and mobility system				
3	Hydraulic car lift				
4	Air compressor				
5	Easy use and accessible toilet in the workshop				
6	Medical facilities at work sites				
7	Pneumatic fluid extractor				

8	Planning machines				
9	Auto service unit (automatic operation)				
10	Head beam aligner				
11	Tyre changers				
12	Quick Service trolley				
13	Centre hole single acting jack				
14	Two post hoist				
15	Sign language interpreter				
16	Furniture such as hand-tool cabinets				
17	Recreational facilities				
18	Computer systems for research				
19	Diagnosing and inspecting machines				
20	Protective clothing's like gloves, stack boot and goggle				