# APPLICATION OF DREYFUS MODEL OF SKILLS ACQUISITION IN CURBING YOUTH UNEMPLOYMENT AMONG THE MOTOR VEHICLE MECHANIC STUDENTS' IN NIGERIA

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**ABSTRACT**

Unemployment has become a leading problem that causes anxiety in the lives of youths resulting in increased antisocial behaviours such as kidnappings and restiveness. Youth unemployment is devastating to both the individual and the society as a whole, psychologically and economically. The paper examines the issue of youth unemployment and looks at potential interventions such as the application of the Dreyfus model of skills acquisition in curbing youth unemployment among motor vehicle mechanic students in Nigeria. This placed a substantial hope in the power and potential of the Dreyfus model of skill acquisition to transform the relationship between the educational system and the labour market. In view of this, the paper reviews the concepts and causes of youth unemployment; Technical, Vocational Educational Education and Training (TVET); Motor Vehicle Mechanic (MVM) programme in Technical Colleges; Dreyfus model of skills acquisition; approaches of learning a skill; training implications of Dreyfus model of Skill acquisition to MVM students and applying the Dreyfus model for skills acquisition in curbing youth unemployment and to changing demands. In view of the conclusion reached, there should be a regular and systematic evaluation of teaching curricula, taking into account the industrial and employers' requirements.

**Keywords:** *Dreyfus model, Motor Vehicle Mechanic Students', Skills acquisition and Youth unemployment.*

## 1    INTRODUCTION

Unemployment is a precarious situation has left the youths in a vicious cycle of poverty that daily crumble their self-confidence and bright future in Nigeria. It is the lack of job opportunities for people typically aged 15–24 years old. According to Gary (2009), this age range is determined by the period when mandatory schooling ends through the age of 24 years.  In order to qualify as unemployed for official and statistical measurement, the individual must be without employment, willing and able to work, of the officially designated 'working age' and actively searching for a position (Andy 2012). However, from the extract of statistics obtained from the National Manpower Board and Federal Bureau of Statistics showed that Nigeria has a youth population of 80,000,000 which corresponds to 60% of the total population of the country. The extract revealed that 64,000,000 of them are unemployed while 1,600,000 are underemployed. In effects resulting in social vices, including armed robbery, destitution, prostitution, political thuggery, kidnapping and generally reduces national output and aggregate income and with resultant effects on the economic growth. Alas, about 4.5 million people go into the labour market annually without any hope of getting employment for life sustenance and workforce development (Musari, 2009). This burning issue of workforce development in Nigeria is to ascertain that human resources are developed to such an extent that the achievement of the desired rate of technological changes will not be impeded by lack of personnel with sustainable skills in the automobile industry.

The automobile industry is a service industry that sustains the transport sector of a nation's economy. The people behind this industry are the Motor Vehicle Mechanic (MVM). The MVM are set of technicians who apply technical knowledge and skills to repair, service and maintain all types of automobiles. These technicians make use tools to adjust, test, diagnose service and completely repair any fault on the motor vehicle for safe and reliable operation according to the manufacturer's specification (Mustapha et al., 2017). In large shops, they specialize in repairing, rebuilding and servicing specific sections of the vehicles such as the braking system, steering and suspension system. In smaller shops, they work on a wider variety of repairs jobs. In order to carry out this operation, good analytical and troubleshooting skills are important to isolate problems with assemblies, components and parts. The skills of an MVM vary greatly; some develop the skills to work on all parts of a vehicle, while others choose to specialize in a particular aspect of the motor vehicle such as automobile electrical/ electronics, motor vehicle body building and repair works.

In the automobile industry, there have been complex changes in the systems and components of automobiles that are imported or assembled in Nigeria. The new development has greatly brought about changes in the skills required of MVM for employment in the automobile and related industry. However, the consequences of MVM

has also inhibited the growth of rural-urban migration which escalates the rate of unemployment causing many unemployed people even reject job offers in rural areas and move to cities thereby worsening the situation. Notwithstanding, this study establishes the application of the Dreyfus model of skills acquisition towards curbing unemployment among the graduates of the MVM in Nigeria.

## 2 THE CONCEPT AND CAUSES OF YOUTH UNEMPLOYMENT

Youths occupy a prominent place in any society. The Federal Government of Nigeria (2014) asserts that the youth are the foundation of a society; their energies, inventiveness, character and orientation define the pattern of development and security of a nation. Mahmud, Mustapha and Saba (2014) defines youth as people aged between 18 and 35. Nigeria's unemployment rate is projected at over 11 per cent compared to the average rate of 9.5 per cent in sub-Saharan Africa. According to the National Bureau of Statistics, young people aged between 15 and 24 years, account for 52.9 per cent of unemployed people while those aged between 25 and 44 years accounted for 41.1 per cent. Therefore, those in the age bracket of 15 and 44 years, account for 94 per cent of the total unemployed persons in Nigeria (Osibanjo, 2006).

Youth's unemployment in Nigeria is a consequence of several factors. Nigeria has continued to experience a high rate of population growth. This increasing population growth has produced an overwhelming increase in the youth population thereby resulting in an increase in the size of the working age population. In Nigeria, youth migrate to the cities more than other migrants and in the cities, job opportunities are very limited. Thus, the rate of urbanization of the youth has continued to create unemployment (Oladele, Akeke & Oladunjoye, 2011). Lack of employable skills due to inappropriate school curricula is another factor contributing to rising youth unemployment. Analysts have argued that in Nigeria generally, many graduates in Nigeria are deficient in Technical Vocational Educational Education and Training (TVET) skills to facilitate self-employment.

## 3 MVM PROGRAMME IN TECHNICAL COLLEGES

Technical, Vocational Education and Training (TVET) is an umbrella term that covers two inseparable concepts, that is, the Vocational Education (VE) and the Technical Education (TE). According to Fitzgerald (2014), these concepts wrap up all "those aspects of the educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic life". As such, Okolie and Yasin, (2017)

defined the terms VE and TE respectively as 'any form of education whose primary purpose is to prepare persons for employment in recognized occupations' while the latter is "seen as the formal training of persons to become technicians in different occupations" such as the Motor Vehicle Mechanic (MVM) in the Technical Colleges (TC).

MVM deals with scientific concepts appertained in the construction and design of a motor vehicle. It is one of the mechanical trades offered as a motor vehicle mechanics' work trade in the Technical Colleges (TC) in Nigeria. According to Okoro (2006), the standpoint for the vocational institution in Nigeria is the TC and the training in MVM is carried out from TC I to TC III at the technical colleges and AT at the tertiary institutions. At the technical college level, the programme is schemed to give birth to the auto mechanic that is competent to carry out preventive maintenance, general repairs and overhauling of various automobile units and components (National Board for Technical Education (NBTE), 2009). At the completion of these programmes, the graduates according to the Federal Republic of Nigeria (FRN) (2013) are opened to be employers of labour, pursue further education in the colleges of education (technical) polytechnics and universities and secure employment either after completing one or more modules of employment skills or at the end of the whole course.

In the quest for the above points, the FRN (2014) further justified that the key components of the curricular activities for technical colleges are mapped out in foundation and trade modules consisting of general education with 30% theory and trade-related courses with 40% workshop practices with 25% and Students Industrial Work Experience Scheme (SIWES) 5% of the total requirement to complete the programme (FRN, 2013).

In line with the above policy, the revised National Technical Certificate (NTC) modular curriculum programme was published in 2001 for automobile mechanics' work and other vocational courses in technical colleges by the NBTE to guide the programmes. The publication was sponsored by the United Education, Scientific and Cultural Organization (UNESCO)-Nigeria project in support of the revitalization of Technical and Vocational Education (TVE) in Nigeria. It is a detailed curriculum in a modular form for trade and practice theory modules (Mustapha, 2018). Furthermore, Nwagbo (2010) stated that lack of interest, low achievement and retention rate in science and technical students to the teaching methods adopted by teachers to teach the students. The negative attributes associated with the conventional teaching methods pose a challenge in the teaching and learning process in MVM course. Udogu and Njeleta (2010) confirmed that innovative instruction approaches have proven effective for students to learn Science Technology Mathematics and Education (STEM).

Furthermore, Idris (2012) also stressed that this challenge necessitates a shift from the instructional approaches (from conventional teaching methods to acquiring a skill by means of instruction and experience).

# 4 DREYFUS MODEL OF SKILLS ACQUISITION

The model was propounded by Stuart Dreyfus and Hubert Dreyfus in 1980. The model was first published as a five-stage model of the mental activities involved in directed skill acquisition. Dreyfus and Dreyfus (1980) stated that in acquiring a skill by means of instruction and experience, the student normally progresses through five developmental stages designated as a novice, advanced beginner, competence, proficient and expertise. As a student becomes skilled, there is less dependency on abstract education and learns more about the factual experience. At each stage of training, the appropriate issues involved in facilitating skill acquisition are addressed.

## 4.1 APPROACHES TO LEARNING A SKILL BY THE DREYFUS MODEL IN THE AUTOMOBILE INDUSTRY

There are two divergent approaches to learning a skill; this includes learning through imitation or trial and error or through an instructor and instruction manual. The latter approach is adopted by the Dreyfus model because of its efficiency as demonstrated in aircraft skills of flying as a learning process by students. The approaches to learning a skill by the Dreyfus model in the automobile industry are categorized based on these stages:

## STAGE 1: NOVICE (STARTING WITH CONTEXT FREE RULES)

At this stage, the work environment of the automobile student is divided into features and rules. The feature is the context-free environment which the student can autonomously recognize without the benefit of experience as non-situational. The students are then given rules for determining action on the basis of these features. Dreyfus' model helps us understand the role of such checklists plays for novices who need rules to guide their actions. Rules prevent novices from becoming overwhelmed by the complicated details of real-world information contexts. To improve on this stage, the automobile student needs monitoring either by self-observation or instructional feedback as to bring his behaviour closer to the rule (Dreyfus & Dreyfus, 1988).

## 4.1.2 STAGE 2: ADVANCE BEGINNER (DISCOVERING MAXIMS AND RULES OF THUMB IN CONTEXT)

As novices acquire more experience in the domain, they begin to be capable of moving from responding by rote to predefined, context-free features of the domain of practice to acting according to rules, either given to them or derived by themselves, grounded in situational aspects of the domain. Aspects, again, are those parts of a situation that come to light only through repeated experience of the domain of practice in which skills are performed (trial and error) or the presentation of "choice examples" by instructors (Dreyfus, 2002). They have perceived characteristics of situations that reveal themselves to be important in some way to the practice of the skill. The example Dreyfus gives of an aspect in driving is the situational engine sound that indicates that it's time to shift gears. While the beginner is limited to following rules such as shift when the speedometer hits 10, the advanced beginner is able to sense that there is a situational aspect connected with shifting as well. Rather than continue to follow an a priori rule, she develops or is given a different kind of rule, an "instructional maxim," to inform her behaviour during skill practice. In the case of driving, she "learns the maxim: Shift up when the motor sounds like it is racing and down when it sounds like it's straining" (Dreyfus, 2002). Clearly, rules covering this sort of situated practice cannot be given to the learner of skill outside the context of practice. But they can be made clear through independent practice and through examples given by a teacher along with the instructional maxims that correspond to them.

## STAGE 3: COMPETENCE (ENCOURAGING ENGAGEMENT AND EMOTIONAL INVOLVEMENT)

This third stage in Dreyfus' developmental model therefore marks the point in the student's development when mechanical rule following should productively begin to reveal its limitations, for it is in this phase of development that students begin to choose their own perspectives on situations and act according to the rules and maxims they've acquired as best they can. In the sphere of driving, the driver must soon move beyond abstract rule-following, which in practice can lead to mechanical performance and, in this domain, potentially dangerous accidents. Following Dreyfus' example, the competent driver going dangerously fast down an off-ramp does not yet have the perceptual background to feel that he/she is in a dangerous situation, nor is there a general rule she can follow to tell her what to do once she determines the nature of her situation. As noted, the competent driver has to "spend ...time considering the speed, angle of bank, and felt gravitational forces" that is

to say determine the salient aspects of a situation and also "decide whether the car's speed is excessive" (Dreyfus, 2002). In other words, the driver must make two decisions in this phase versus the single decision within the controlled learning environment proper to the advanced beginner phase. After deliberating about the circumstances in which the action is to be performed, and the action itself, the driver makes a choice about whether or how much to brake or let off of the gas and "is relieved if they get through the curve without being honked at, and shaken if they begin to go into a skid" (Dreyfus, 2004). In the process of experiencing joy and relief at successfully navigating the ramp, or fear and shakenness if things go awry, learners begin to associate the variety of perceived sensations of leaving an off-ramp with the joy or disconcertedness that results from the outcome of their chosen actions. Restated, they begin to acquire an emotionally charged perceptual repertoire in this stage, repertoire students need in order to move in later stages of development towards more intuitive forms of action characteristic of expertise.

## STAGE 4: PROFICIENT (FACILITATING "WORLD IMMERSION")

At this period of time, the automobile student needed some sort of analytical principles, in the form of rules, guidelines or maxims to connect his experience of general situation to a specific action. This is the trial stage in the step-wise improvement of mental processing as the experience situation is so vast that normally each specific situation immediately dictates an intuitively appropriate action. As the automobile students almost master the skills, he/she becomes capable of supervising others and developing his own rules. Drivers who reach proficiency begin to have a visceral sense of the road and their relationship to it. As Dreyfus notes, "The proficient driver, approaching a curve on a rainy day, may feel in the seat of his pants that he is going dangerously fast" (Dreyfus & Dreyfus, 2005). By the phrase "feel in the seat of his pants," Dreyfus means that emotion or feeling is intuitively evoked in the driver by virtue of having felt similar emotions in like circumstances. But even though the driver perspective may be intuitive at this point, the driver still does not have the accumulated background experience to intuitively know what to do to adjust his driving.

## STAGE 5: EXPERTISE

The mastery stage is achieved when the learner no longer needs principle, the automobile students can stop to pay conscious attention to his performance and can let all the mental energy previously used in monitoring his performance go into almost instantaneously, the appropriate perspective and associated actions (Dreyfus & Dreyfus, 2005). Dreyfus notes that "the expert driver,

generally without any awareness, not only feels when slowing down on an off-ramp is required, he or she knows how to perform the appropriate action without calculating and comparing alternatives.

## 5 TRAINING IMPLICATIONS OF THE DREYFUS MODEL OF SKILL ACQUISITION TO MVM STUDENTS

The training implications of the stages of the model include the fact that it facilitates advancement to the next stage, and help to avoid the temptation of introducing intricate and sophisticated aids. Besides, it does not impede advancement to a higher level and prevents regression to a lower level. These stages of Dreyfus model are related to this study in the sense that at Novice stage, the MVM as a newcomer learns the tools, equipment and machines used in automobiles while at Advance Beginner stage, the MVM becomes acquainted with the factors used in the automobiles skills acquisition centre. At the Competence stage, the MVM goes further to see that all actions or procedures are directed towards a goal when learning the procedures and techniques used in mechatronics. As the MVM advance to the Proficient stage, the MVM becomes familiar with practical processes and applications of the tools, equipment and machines used in mechatronics and can even train other MVM at the end. The individual can develop rules and regulations based on circumstance. Finally, at the Expertise stage, the MVM can make available a systematic approach to common engine faults and malfunctions in relation to the manufacturers' specification (Dreyfus & Dreyfus, 2005).

## 6 APPLYING THE DREYFUS MODEL FOR SKILLS ACQUISITION IN CURBING YOUTH UNEMPLOYMENT

Dreyfus illustrates this model with a number of practical examples in various domains of skill acquisition. Driving, piloting an aircraft, chess playing, the complex skill sets that comprise decision-making in business management, and language acquisition are just some of the domains of practice that Dreyfus uses to illustrate the stages of skill acquisition he advances (Dreyfus & Dreyfus, 1980; Dreyfus & Dreyfus, 1988). The perspectives on learning posited by Dreyfus suggest that MVM is a profession that an individual enters through graduate automobile technology education. As a novice, an individual becomes a member of the community of practice and assumes personal responsibility for learning and mastering technical skills and competencies through experience, mentoring professional development, and continued actions (or tasks) comprising activities situated in automobile and related industry.

The actions that makeup works as an automobile technician are consciously undertaken and targeted at specific goals that may or may not be explicitly directed toward the object of the activity but are nonetheless directed and guided by it. These actions have operational aspects that are determined by the conditions under which they are carried out. Considering that part of the beginner and advanced-beginner stages of the Dreyfus Model of Skill Acquisition, routine tasks for MVM are the unconscious abilities that emerge as a result of practice and experience, and if conditions change to where the normal execution of an operation is impeded, conscious attention is necessary and the operation becomes an action. MVM can use observations and experiments to identify and describe qualitative differences between the processes of experienced workers and those of novices. Understanding how experienced MVM use knowledge to get around in the automobile and related industry and how and what knowledge was acquired in the course of getting around illustrates the ways in which an individual gains mastery over technical skills, increases proficiencies and competencies and progresses professionally.

## 7 APPLYING THE DREYFUS MODEL FOR SKILLS ACQUISITION TO CHANGING DEMANDS

Today, the automobiles are getting intricate and the need for professional care is becoming imperative as the development of new technologies and mechanisms that have been taking place in the automobile and related industry (Idris et al, 2018). The twenty-first-century automobile workshop is a vibrant place of change, discovery, learning and experimentation. Relying on the workshop as a place where a range of technology services, tutoring and learning services, advising and other services aimed at meeting the needs of students and scholars. These differentiated skills can be seen in the work of proficient MVM in the workshop and academic environment.

Training and learning throughout a professional career are not routine or repetitive. Professional development opportunities focus on specific forums for personal growth in support of the organizational change. Updating position descriptions enables managers to incorporate expectations that staff grow and develop professionally so that increasingly sophisticated user demands can be met. Position descriptions are generally prepared by workshop managers in consultation with human resources officers. While the goal is to craft a position description that meets an organizational need, they work within the constraints of previous descriptions and legally acceptable language. Writing job descriptions does not lend itself to the recognition of nuanced levels of skills development or the relationship between tacit understanding and ability. The focus is on the cognitive abilities and explicit skills needed to do the work. Position descriptions use verbs reflecting levels of skill tied to educational preparation, years of experience and salary. Aligning skill levels with career ladders enables both the employee and the manager to identify the development of competencies that parallel advancements through positions from entry-level to mastery to expert.

## 8 CONCLUSION

It is pertinent at this point to note that the situation as it pertains to youth unemployment in Nigeria is a vivid menace to social, economic and political development. This paper has placed substantial hope in the power and potential of the Dreyfus model of skill acquisition to transform the relationship between the educational system and the labour market. It is strongly believed that the application of the Dreyfus model of skill acquisition can be therapeutic for curbing the escalating rate of youth unemployment with Technical, Vocational Education and Training (TVET) being on the front burner. This will in-turn, strengthen the possibility of tapping the rich proceeds of TVET, eradicating forms of poverty and promote lasting sustainable development.

## 9 RECOMMENDATIONS

In view of the conclusion reached, the following recommendations are hereby offered.

1. There should be a review of the MVM training programmes to ensure that the youths are competent and employable in the automobile and related industries.

2. Given the evolution of industrial and labour laws, there should be a regular and systematic evaluation of teaching curricula, taking into account the industrial and employers' requirements.

3. The roles, responsibilities, and ethical obligations of employees in the industry should be adequately communicated to the students during training by focusing on career guidance and counselling, support and introduction of entrepreneurship education into the school curriculum.

4. More attention should be placed on orientating the psyche of beginners at entry level into TVET programmes, to strengthen career adaptability and academic major satisfaction of the potential graduates. If this is done correctly, dropout rate will plummet, consequently, youth unemployment in the country.

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