

**ENTREPRENEURIAL SKILLS NEEDED BY ELECTRICAL/ELECTRONIC  
STUDENTS FOR ESTABLISHING SMALL AND MEDIUM SCALE  
ENTERPRISES IN MINNA METROPOLIS.**

**BY**

**OMIRINDE, Muthimainat Oluwatosin**

**2016/1/63720TI**

**DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION  
SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION  
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**

**APRIL, 2023**

**ENTREPRENEURIAL SKILLS NEEDED BY ELECTRICAL/ELECTRONIC  
STUDENTS FOR ESTABLISHING SMALL AND MEDIUM SCALE  
ENTERPRISES IN MINNA METROPOLIS.**

**BY**

**OMIRINDE, Muthimainat Oluwatosin**

**2016/1/63720TI**

**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF INDUSTRIAL  
AND TECHNOLOGY EDUCATION, SCHOOL OF SCIENCE AND TECHNOLOGY  
EDUCATION, FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF  
BACHELOR OF TECHNOLOGY DEGREE (BTECH) IN INDUSTRIAL AND  
TECHNOLOGY EDUCATION**

**APRIL, 2023**

## **DECLARATION**

I hereby declare that this project titled “Entrepreneurial skills needed by electrical and electronics student for the establishment of small and medium scale enterprise in Minna metropolis” is a collection of my original research work and it has not been presented for any other qualification anywhere. Information from other sources published or unpublished has been duly acknowledged.

OMIRINDE, Muthimainat Oluwatosin

Name

.....

Signature and Date

**CERTIFICATION**

The project titled “Entrepreneurial skills needed by electrical and electronics student for the establishment of small and medium scale enterprise in Minna metropolis” by Omirinde Muthimainat Oluwatosin meets the regulation governing the ward of the degree of bachelor of technology in industrial and technology education. Federal University of Technology Minna and is approved for its contribution to knowledge and literacy presentation.

Dr. Ibrahim Dauda  
Supervisor

.....  
Signature and Date

Dr. T.M. Saba  
Head of Department

.....  
Signature and Date

.....  
External Examiner

.....  
Signature and Date

## **DEDICATION**

This project is dedicated to my Amazing parent Alh. Mr. and Mrs. Omirinde and siblings for your unconditional love, prayer and care.

## **ACKNOWLEDGEMENT**

All praise and thanks are giving to Almighty Allah who created the whole universe; who spares my life from the beginning of my study to this present moment.

I sincerely acknowledge the assistance of my able research supervisor Dr. Dauda Ibrahim who took out of his tight schedule to read through and make necessary criticism for the betterment of my work, His useful suggestions and encouragement proved very helpful in the cause of completion of this project.

My gratitude extends to the head of department of Industrial and Technology Education, Dr. Saba Tswana Moses for his assistance and giving me the opportunity to make the research work a successful one. The programme coordinator Dr. A. M Hassan for his contribution and assistance in the completion of the project.

Special appreciation goes to all my departmental lecturers especially Dr G.A. Usman and Dr. W. B. Kareem, for their advice, encouragement and supports throughout my undergraduate programme.

My sincere gratitude goes to my beloved incomparable parents Alhaji N. Omirinde and Alhaja B. Omirinde for their support, courage, advice and understanding; My sisters Dr. Mrs. Omirinde-Ganiyu and Mukrimat Omirinde and my beloved Ali Ganiyu for their prayers, caring and their assistance during the course of study.

I acknowledge the efforts of my friends Faith Oye, Nurudeen Alaka, Abubakar Naimat, Salam zeenat, My electrical classmates, my ITE classmates as a whole for their special contribution in one way or the other throughout the stay of my programme. finally, appreciation goes to many numerous to mention for their immense contributions to the success venture. God bless you all.

## **ABSTRACT**

The study was to examine the entrepreneurial skills needed by electrical/electronic students for establishing small and medium scale enterprise in electrical/electronic in Minna Metropolis. Four (4) research questions were formulated to guide this study. A total of 77 respondents consisting of 33 lecturers and 44 electrical/electronic students randomly selected were used as the population for the study. A questionnaire was developed and validated by three experts from industrial and technology education department. Mean and standard deviation were the statistical tool used to analyze the data collected for the study, the finding also reveals that inadequate attention to entrepreneurial skills was not given by electrical/electronic teachers and students. The study found that nineteen (19) technical skills, sixteen (16) managerial skills, twenty (20) marketing skills and seventeen (17) communication skills are needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic. The study also found out that there was no significant difference in the mean responses of teachers and students on the technical, managerial, marketing and communication skills needed by electrical/electronic student for establishing small and medium scale enterprise. Based on this finding, it was recommended that all the skills identified in this study should be incorporated into electrical/electronic curriculum to train students. It was also recommended that the facilities for effective implementation of the identified skills should be provided by government and employers of electrical/electronic graduates.

## TABLE OF CONTENTS

Contents	Pages
Cover Page	
Title Page	i
Declaration	ii
Certification	iii
Dedication	iv
Acknowledgement	v
Abstract	vi
Table of content	vii-ix
List of Tables	

### CHAPTER ONE INTRODUCTION

1.1 Background of the Study	1-4
1.2 Statement of the Problem	4
1.3 Purpose of the Study	5
1.4 Significance of the Study	5
1.5 Scope of the Study	6
1.6 Research Questions	6
1.7 Hypotheses	7

### CHAPTER TWO REVIEW OF RELATED LITERATURE

2.1 Theoretical Framework	8-11
---------------------------	------



2.2	Conceptual Framework	11
	i. Technical colleges in Nigeria.	12
	ii. Electrical/Electronic trade.	14
	iii. Small and medium scale enterprises in Nigeria.	15
	iv. Technical skills for establishing small and medium scale enterprise.	17
	v. Managerial skills for establishing small and medium scale enterprise.	17
	vi. Marketing skills for establishing small and medium scale enterprise.	19
	vii. Communication skills for establishing small and medium scale enterprise.	19
2.3	Review of related empirical study.	20
2.4	Summary of literature reviewed.	24

### **CHAPTER THREE RESEARCH METHODOLOGY**

3.1	Research Design	25
3.2	Area of Study	25
3.3	Population of the Study	25
3.4	Instrument for Data Collection	26
3.5	Validation of Instrument	26
3.6	Reliability of Instrument	27
3.7	Administration of Instrument	27
3.8	Method of Data Analysis	27

### **CHAPTER FOUR RESULTS AND DISCUSSIONS**

4.1	Research Question 1	28-30
-----	---------------------	-------

4.2	Research Question 2	30
4.3	Research Question 3	31
4.4	Research Question 4	33
4.5	Hypothesis I	35
4.6	Hypothesis II	37
4.7	Hypothesis III	39
4.8	Hypothesis IV	41
4.9	Findings of the study	43
4.10	Discussion of Findings	46

## **CHAPTER FIVE**

### **CONCLUSION AND RECOMMENDATION**

5.1	Summary of the problem	49
5.2	Implication of the study	50
5.3	Contribution to knowledge	50
5.4	Conclusion	51
5.5	Recommendation	51
5.6	Suggestion for further study	52
	References	53-56

Appendix A: Letter of Request for Instrument Validation

Appendix B: Research Questionnaire

## List of Tables

Tables	Title	Pages
4.1	Mean Responses of the respondent on the Technical Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.	28
4.2	Mean Responses of the respondent on the managerial Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.	30
4.3	Mean Responses of the respondent on the marketing Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.	31
4.4	Mean Responses of the respondent on the communication Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.	33
4.5	Mean, standard deviation and T-Cal analysis of the Responses of the respondent on the technical Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.	35
4.6	Mean, standard deviation and T-Cal analysis of the Responses of the respondent on the managerial Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.	37
4.7	Mean, standard deviation and T-Cal analysis of the Responses of the respondent on the marketing Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.	39
4.8	Mean, standard deviation and T-Cal analysis of the Responses of the respondent on the communication Skills Needed by electrical/electronic student for establishing Small and	41

Medium Scale Enterprise in electrical/electronic in Minna  
Metropolis.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

Electrical/Electronic engineering and technology trade is one of the career paths offered in the Nigerian universities, polytechnics and technical colleges. It involves the application of scientific knowledge in the design, repairs and installation and maintenance of electrical equipment. The programme for Electrical/Electronic study in the Nigerian universities, polytechnics and technical colleges is designed to produce competent electrical/electronic engineer, technologist, technicians and craftsmen. According to the National Board for Technical Education (NBTE, 2011), an electrical/electronic student is expected to be able to test, diagnose, service and completely repair any fault relating to electronics equipment or installation, as well as know the main units and system in-line with the manufacturer specification and in accordance to the National Electrical Code (N.E.C.). This specification and electrical codes form the basic of electrical and electronics technology programme.

The programme of Electrical/Electronic technology and engineering is awarded with Bachelor in Technology (B.Tech.) and Bachelor in Engineering (B.Engr.) in the university, Higher National Diploma (HND) and National Diploma (ND) in polytechnic and Advance National Technical Certificate (ANTC) and National Technical Certificate (NTC) in technical college. The programme if adequately implemented is expected to produce competent electricians or craftsman in electronics trade work for industrial and technological development in Nigeria and such create employment or self-reliance when in possession of adequate skills after graduation. When an Electrical/Electronic graduate set up a business where they can apply the knowledge and skills learnt for the production of goods and services, it is known as a Small and Medium Scale Enterprise (SMEs).

Small and medium scale enterprises (SMEs) is the production of goods and services in the most efficient manner through which the development of small and medium scale enterprise (SMEs) has been recognized in both developing and developed nations as one of the viable means of development, growth and survival of any nation's economy. In research carried out by Bayere (2012), he argued that developed countries like the United State of America, Japan, England and France reveal beyond doubt that the major reason for their rapid development has its root in small and medium scale enterprise (SMEs). This enhances the economic growth and development if it is properly utilized and managed. In developing country such as Nigeria, integration of small and medium scale enterprise into the nation's economy is seen as the best way to overcome unemployment, poverty and inequality (Ogwumike, 2018). Crucial to the process of integration is the development of a vibrant private sector in which small and medium scale enterprise such as an Electrical/Electronic industry play a vital role (Raynard & Maya, 2010). The act of utilizing skills acquired through technology education in setting a business venture or enterprise, managing it effectively and taking risk to achieve a set of goal is known as Entrepreneurship.

Entrepreneurship is defined by Wale-Awe (2010) as the efforts of an entrepreneur in relation to bringing new ideas or creation of new things to satisfy human wants. the goal of an entrepreneurship is creation of value, change how people do business, perceive things and change lives However, if any entrepreneur is to be successful, they must have the basic skill to make function adequately and efficiently in their business. A skill is the learned capacity or ability to carry out predetermined results, often with minimum outlay of time and energy. In other word, skill is the ability that one possesses. Skill that require the combination of specific knowledge and know-how of a work to be done using the body to achieve the target is basically technical in nature (Domooei, Maxey & Watkins, 2018). In the working environment, technical skill is normally referred to technical procedure or technical task that are typically easy to be

observed, quantified and measured. The skills are tangible, specific and usually teachable, such as typing 50 word per minute or changing tires (Rosalina, 2019). In other view, technical skill is the ability to perform work in a technically competent manner and also to monitor and manage it in an independent and critical manner (Frauzi, 2010). However, most Electrical/Electronic graduate are not able to establish their own enterprise due to lack of entrepreneurial skills, therefore, entrepreneurship skills is Needed through appropriate entrepreneurship education.

Entrepreneurship education is defined by Wilson (2018) as the development of attitudes, behaviors and capacities at an individual's career level, creating a range of long term benefits to the society and the economy. Entrepreneurship education according to Paul (2015) is structure to achieve the following objectives: To offer functional education for youth that enable them to be self-employed and self-reliant; Provide the youth graduate with adequate training that will enable them to be creative and innovative in identifying business opportunities; Offer tertiary institution graduates with adequate training in risk management, to make certain bearing feasible; To serve as catalyst for economic growth and development; To reduce high rate of poverty; Create employment; Reduction in rural-urban migration; Provide young graduates with enough training and support that will enable them establish a career in small and medium scale business; To inculcate the spirit of perseverance in youths and adults which will enable them to persist in any business venture they embark on and create smooth transition from traditional to modern industrial economy.

In traditional economy understanding, entrepreneurship was strongly associated with creation of business and therefore, it was argued that the skills required to achieve this outcome could be developed through training. However, many entrepreneurship programs are actually SMEs training programs that focus on functional management skills for small/medium businesses (Zahra, 2015) instead of starting, building, financing and nurturing high-growth companies.

Some technical and electrical/electronic engineering and technology graduates are unemployed because they do not possess the entrepreneurial skills that will enable them establish and manage their business efficiently. Rather, they are found doing menial jobs and some low, non-profitable job just because they do not possess the skill to be self-reliant and self-employ in managing and establish a small and medium scale enterprise (SMEs).

Lack of entrepreneurial skills has been the major challenge to the development of SMEs (Smith & Perks, 2016) and skill acquisition through training can provide long lasting solution to the survival battle of the SMEs and this will also go a long way to trim down the problem of unemployment in the country and also motivate and equip the youth population on being job creators rather than job seekers. These bring about the need for entrepreneurial skilled youth in our technical, electrical/electronic technology and engineering graduates to foster their skill acquisition which will enable them to be job creators. Hence, the study aimed at identifying the Entrepreneurial skills Needed by students for establishing small and medium-scale business/enterprise (SMEs) in electrical and electronic sales and services in Minna Metropolis.

## **1.2 Statement of the Problem**

Despite of the fact that the Nigerian government has put in place monetary, fiscal and industrial policy measures to promote and develop small and medium scale enterprise (SMEs) in Nigeria, it has been observed that majority of graduates from technical and electrical/electronic technology and engineering who are expected to have acquire skills for self-reliance and join the pool of entrepreneur in establishing SMEs do not have either the technical or entrepreneurial skill or both required. Lack of technical skills and competence by trainees in vocational centers has resulted to a situation whereby majority of the trainees hope solely on paid employment which is not forthcoming in view of the economy and employment situation of the country. Technical, engineering and technological institution are expected to give training and impact the necessary skill and competency to individuals who shall be self-reliant



economically (FGN, 2013), which offer both a thorough and specialized preparation for the initial employment, including self-employment (UNESCO and ILO, 2012). It is through the acquisition of the right entrepreneurial skills and competency the graduate can successfully establish and manage the enterprise and contribute their quota to the industrial and economic development of the country. Lack of entrepreneurial skills has been a major challenge to the development of SMEs (Smith & Perk, 2016) and skills acquisition through training can provide a long-lasting solution to the unemployment and job hunting situation in the country, which in turn help to foster the teeming youth in acquisition of entrepreneurial and technical skills to enable them become job creators rather than job seekers, hence, the study aimed at identifying the Entrepreneurial skills Needed by students for establishing small and medium-scale business/enterprise (SMEs) in electrical and electronic sales and service in Minna metropolis.

### **1.3 Purpose of the Study**

The purpose of this study is to identify the Entrepreneurial skills Needed by students for establishing small and medium-scale business/enterprise (SMEs) in electrical and electronic sales and services in Minna metropolis. The study specifically sought to determine:

1. The technical skills Needed by graduate student for establishing small and medium scale enterprise (SMEs) in electrical/electronic.
2. The managerial skills Needed by graduate student for establishing small and medium scale enterprise (SMEs) in electrical/electronic.
3. The marketing skills Needed by graduate student for establishing small and medium scale enterprise (SMEs) in electrical/electronic.
4. The communication skills Needed by graduate student for establishing small and medium scale enterprise (SMEs) in electrical/electronic.

#### **1.4 Significant of the Study**

The study will be significant to technical, engineering and technology teachers and lecturers, undergraduate and graduate student, craftsmen, technicians and Minna youth empower and employment bodies, especially, the unemployed student of electrical/electronic engineering and technology. It will be significant in knowing the proper and most efficient method in equipping them with the necessary skills in establishing small and medium scale enterprise (SMEs) in Minna metropolis.

The teachers and lecturers with attain higher knowledge achievement and acknowledge the impact of the addition of entrepreneurship study in the school curriculum and passing the knowledge and skills to the student require for them to be competent and efficient and furthermore, foster value and idea generation that determine individual entrepreneurship.

#### **1.5 Scope of the Study**

The concentration of the study is to identify the Entrepreneurial skills Needed by students for establishing small and medium-scale business/enterprise (SMEs) in electrical and electronic sales and services in Minna. The purpose of this study was limited to technical skills, managerial skills, marketing skills, financial and communication skills.

Other skills include: computer skills, leadership skills, analytic skills, observatory skills, calculative and comprehensive skills and interpersonal skills.

#### **1.6 Research Questions**

The study answered the following questions.

1. What are the technical skills Needed by student in setting up SMEs in Electrical/Electronics?
2. What are the managerial skills Needed by student in setting up SMEs in Electrical/Electronics?

3. What are the marketing skills Needed by student in setting up SMEs in Electrical/Electronics?
4. What is the communication skills Needed by student in setting up SMEs in Electrical/Electronics?

### **1.7 Hypothesis**

- 1) There is no significant difference in the mean response of the teachers and students on the technical skills needed by student in setting up SMEs in Electrical/Electronics
- 2) There is no significant difference in the mean response of the teachers and students on the managerial skills needed by student in setting up SMEs in Electrical/Electronics
- 3) There is no significant difference in the mean response of the teachers and students on the marketing skills needed by student in setting up SMEs in Electrical/Electronics
- 4) There is no significant difference in the mean response of the teachers and students on the communication skills needed by student in setting up SMEs in Electrical/Electronics

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Theoretical Framework

The theoretical framework for this study centers on Economic theory of entrepreneurship, Psychological theories of Entrepreneurship and Innovation theory

##### 2.1.1 Economic theory of entrepreneurship

The term entrepreneur has been introduced into economics by Cantillon which was variously translated into English as merchant, adventurer and employer, which means the undertaker of a project but Jean Baptiste Say (1803) first accorded the entrepreneur prominence. The term was later popularized by James Stuart Mill in England. The economic theory of entrepreneurship considers the relationship between economic conditions and incentives to arrive at a risk-reward equation that informs a determination on whether or not to pursue a potential venture. This theory assumes that the entrepreneur is the one responsible for pulling resources, labour, materials and other assets together in order to make their value greater than before, and also introduce changes, innovations, creativity and a new order.

Features of Economic Theory of Entrepreneurship

- Entrepreneurship and economic growth take place when the economic conditions are favorable.
- Economic incentives are the main motivations for entrepreneurial activities.
- Economic incentives include taxation policy, industrial policy, sources of finance and raw material, infrastructure availability, investment and marketing opportunities, access to information about market conditions, technology etc.

- Economic theories of entrepreneurship tend to understand business ventures in terms of an innovator purchasing several factors of a product at a bulk rate, combining them for resale at a higher rate but in the face of unknown market conditions.

Economic factors that encourage or discourage entrepreneurship include taxation policy, industrial policy, easy availability of raw materials, easy access to finance on favorable terms, access to information about market conditions, availability of technology and infrastructure and marketing opportunities

### **2.1.2 Psychological theories of entrepreneurship**

Psychological theory of entrepreneurship identifies traits, motives and personalities as the major factors that infuse the entrepreneurial spirit in an individual. The theory emphasizes on personal characteristics that define entrepreneurship which are Personality traits, need for achievement and locus of control are found to be associated with entrepreneurial inclination, Psychodynamic model and Risk-taking propensity. The psychological theory which focuses on personality factors, believes that entrepreneurs have unique values and attitude towards work and life. Psychological attributes differentiate entrepreneurs from non-entrepreneurs, and successful entrepreneurs from unsuccessful ones.

The psychological theories are;

**Personality Trait:** According to the personality trait theory (2014), Personality trait is defined as stable qualities that a person shows in most situations. Personality traits are the enduring inborn qualities or potentials of the individual that naturally make him/her an entrepreneur. Some of the traits which entrepreneur exhibits include vision, enthusiastic, optimistic, flexible, open mindedness, and versatility amongst others.

**Need for achievement model:** The need for achievement theory was propounded by McClelland (1961). The theory explained that human beings have a need to succeed, accomplish, excel or achieve. Entrepreneurs are usually driven by this need to achieve and

excel. This theory states that people desire to achieve something for their inner feeling of accomplishment.

**Locus of control:** Locus of control was first introduced by Julian Rotter in the 1950s. Rotter (1966) refers to Locus of Control as an individual 's perception about the underlying main causes of events in his/her life. Locus of control orientation is a belief about whether the outcomes of our actions are contingent on what we do (internal control orientation) or on events outside our personal control (external control orientation). Entrepreneur 's success comes from his/her own abilities and also support from outside. This theory states that there is a degree to which one believes that he/she is in control of one 's destiny. This can either be internal or external locus of control.

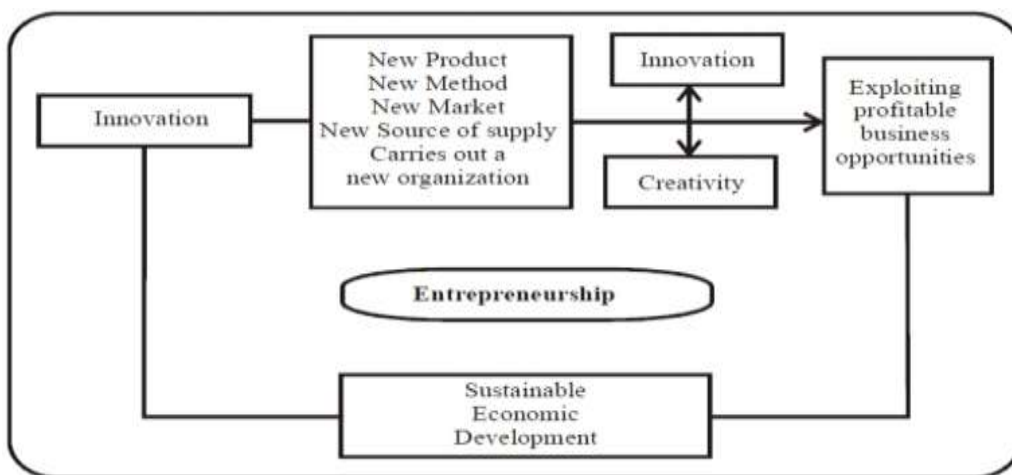
- ❖ Internal Locus of control: individuals with an internal locus of control believe that they are able to control life events.
- ❖ External locus of control: individual with an external locus of control believe that life's events are the result of external factors, such as chance, luck or fate.

**Psychodynamic Model:** This model was propounded by Kets de Vries. The model is concerned with how people tend to be self-employed and become successful because of their troubled childhood. In troubled childhood, children tend to be abused, with low self-esteem, and lack of confidence. Therefore, an individual growing in such an environment does have reserved wishes towards those in control.

**Risk Taking:** This theory contends about one 's willingness to accept risk. People who are more likely to accept risk and taking chances are more likely of being self-employed than those who do not take risk.

### 2.1.3 Innovation theory

The innovation theory was first advocated by Joseph Schumpeter in 1934. Schumpeter introduced the concept of innovation as key factor in entrepreneurship in addition to assuming risks and organizing factors of production. Schumpeter defined entrepreneurship as a creative activity. An innovator who brings new products or services into economy is given the status of an entrepreneur. He regards innovation as a tool of an entrepreneur. The entrepreneur is also viewed as the engine of growth which sees the opportunity for introducing new products, new markets, new sources of supply, new forms of industrial organization or for the development of newly discovered resources.



### 2.2. Conceptual Framework

Concept is an idea or principle that is connected with something. Anyakoha (2019) defined a concept as an idea, thought or devolution of abstract system of thoughts, by which science investigates, interprets and understands particular segment of reality of phenomena. Eboh (2019) explained that the concept is a logical construct derived from sense impressions, precepts (theory) and experiences (empirical). To conceptualize is to formulate concepts, that is, to communicate precisely the meaning of a term, one's own construct of that term.

Conceptual framework is an organized way of thinking about how a project takes place and how its activities can be understood. In the view of Miller (2016), conceptual framework refers to a set of coherent ideas or concepts organized in a manner that makes it easy to communicate with others.

A conceptual framework for research purpose is a schematic description and illustration of the causative mechanisms and relationship deducible from the research problem; it is embedded in the definition of the research problem and the statement of hypothesis. Eboh (2019) stated that conceptual framework is used in research as outline of possible courses of action or to present a preferred approach to an idea or thought. Conceptual framework act like maps that give coherence to empirical inquiry, as used in the context of a study, it involves the explanation of the terminologies used for the purpose of study. The concept examines in the study include: technical colleges in Nigeria, electrical electronic trade, small and medium scale enterprise, financial skills for establishing small and medium scale enterprises, marketing skills for establishing small and medium scale enterprise and communication skills for establishing small and medium scale enterprises.

### **2.2.1 Technical colleges in Nigeria**

Technical colleges or institutes offer an education that prepares students for a specific trade or career. They span up to less than 2 to 4 years depending on the programs you choose. Following the completion of the course, graduates are awarded a degree, certificate, or diploma. Technical college is an integral part of the total educational system. It contributes towards the development of good citizenship by developing the physical, social, civic, cultural and economic competencies of the individual Sanni (2012). In the technical colleges, students are trained to acquire relevant knowledge and skills in different occupations for employments in the world of work (NBTE, 2013).



According to federal ministry of education (2014), a technical college is a segment of technical and vocational education (TVE) designed to produce craftsmen at the secondary school level and master craftsmen in the advanced craft. The goals of technical colleges, as stated by federal ministry of education (2014) are, to provide trained man power in the applied sciences, technology and business, particularly at craft, advanced craft and technician levels; provide the technical college and vocational skills necessary for agricultural, commercial and economic development; and give training and impart the requisite skills to individuals who shall be self-reliant economically and in tune with latest technology. Technical colleges are regarded as the principle vocational institutions in Nigeria. They give full vocational training intended to prepare students for entry into various occupation. Technical colleges train craftsmen in auto mechanics, plumbing, carpentry and joinery, cabinet making, painting and decoration, welding, electrical installation, radio and TV repair, building construction and a few other areas. On completion of the course of training, students obtain work in industries or establish business on their own.

According to NABTEB (2013) the list of available programs in technical colleges are presented below.

1. **Automobile trade:** these trades comprise of auto electric works, motor vehicle mechanics, vehicle body building, and agricultural implement mechanics.
2. **Building and woodwork trades:** these trades cover block laying, bricklaying and concreting, carpentry and joinery, draftsmanship crafts practice, furniture design and construction, machine wood working, painting and decorating
3. **Business trade:** consist of business studies, parts merchandising typewriting, stenography
4. **Computer trades:** contain computer maintenance and GSM repairs, computer studies

5. **Electrical/electronic trades:** encompass appliance maintenance and repair, electric installation, and maintenance works, instrument mechanics, radio, television & electronic works
6. **Hospitality trades:** contain catering crafts practice
7. **Mechanical trades:** embraces fabrication and welding, foundry craft, marine engineering, mechanical engineering crafts practice, plumbing and pipe fitting, refrigeration and air conditioning work
8. **Printing trades:** are ceramic, graphic arts and printing
9. **Textile trade:** comprise of garment making, leather trades and textile trades
10. **General educational courses:** include biology, chemistry, entrepreneurship education, ICT, mathematics, physics, economics, technical drawing.

The programs in the college were designed to train craftsmen and artisans for a profiting of individuals and the economy. The success of technical and vocational education program in making substantial contribution to the economy of a nation like Nigeria depends largely on the success of the process of imparting the required knowledge, attitude and to skills to the students.<sup>6</sup>

### **2.2.2 Electrical/electronic trade**

Electrical and Electronic trades are among the skilled areas studied in technical colleges. Electrical and Electronic trade program aim at producing craftsmen, technicians and other skilled personnel who will be enterprising and self-reliant with skills in domestic and industrial installations, as well as operate, maintain and repair electrical and electronic equipment, among others. The trade, as offered in the technical college, comprise of electrical installation and maintenance work; Instrument Mechanics; Appliance maintenance and Repairs; as well as radio, television and electric work (NBTE 2013; UNESCO, 2013)

The trade provides learners with the practical skills and knowledge required for an electrical/electronic tradesperson employed in the manufacturing, mining, oil and other 29 industries. The study encompasses contents that include electricity, electronics, electromagnetism, and communications, among others. Most of this content requires understanding of some abstract science content, which serves as the foundation upon which other contents are laid. The skill developed in this trade include fault finding, servicing, modification of machinery, and equipment maintenance.

As spelt out by NBTE (2013), the curriculum of each electrical and electronic trade program is broadly divided into three components, which are:

- a. General education, which account for 30% of total hours required for the program.
- b. Trade theory, trade practice and related studies which accounts for 65%.
- c. Supervised industrial training/work experience which account for 5% of the total hours required for each program, this component which can be taken in industries or production unit is compulsory for all full-time students.

### **2.2.3 Small and medium enterprise**

The central bank of Nigeria (2016) define small and medium scale enterprise in Nigeria according to asset base and number of staffs employed. The criteria are asset base between N5 million to N500 million and a staff strength between 11 to 300 employees. There is consensus among policy makers, economists and business experts that small and medium scale enterprise (SMEs) are drivers of the economy. A healthy SMEs sector contributes prominently to the economy through creating more employment opportunities, generating higher production volumes, increasing exports and introducing innovation and entrepreneurship skills. According Bashir Ahmad Fida (2018), SMEs are the first step towards development in economy and industrialization. The dynamic role of SMEs in developing countries, positions

SMEs as the engine through which the growth objectives of developing countries can be achieved, a role that has longed been recognized as one of the significant characteristics of a flourishing and growing economy is a vibrant and blooming SME sector.

SMEs play a vital role in the development of a nation; they contribute to socio-economic development in various way by creating employment for rural and urban growing labor force and providing desirable sustainability and innovation in the economy as a whole. Fayad (2018) propounds that most of the current multi-million-dollar enterprise have their origin in SMEs. Nevertheless, SMEs in developed and less developed countries is still facing a number of difficulties and obstacles that are impeding and complicating their operation and growth. The value of small business sector is recognized in economy worldwide irrespective of the nation's developmental stage. The contribution towards growth, job creation and social progress is highly valued and SMEs is regarded as the essential element to a successful formula for achieving economic growth (Vosloo, 2014). It's estimated that SMEs employs 22% of the adult population in developing countries (Daniels, 2014; Daniels and Ngwira, 2015; Daniels and Fisseha, 2015). UNIDO (2016) estimates that SMEs represents over 90% of private businesses and contributes to more than 50% of employment and of GDP in most African countries. An earlier study by the competition commission (2018) estimated that 99.3% of Nigerian businesses were SMEs and accounted for 53.9% of the total employment and contributed 34.8% to GDP. For proper running of SMEs, there is need to acquire entrepreneurial skills.

Entrepreneurial skill according to Richard, Gary and Larry (2017) includes management skills, marketing skills, financial skills and communication skills. Hisrich and Peter (2015) also categorized entrepreneurial skills into technical skills, business management skills and personal entrepreneurial skills. In the opinion of Igbo in Anyakoha (2019), skill Needed for success in entrepreneurship are managerial skills, financial skills, marketing skills and sales

skills. There are four basic skills that student of Electrical/Electronic discipline must possess to function effectively as an electrical/electronic entrepreneur. These skills are: technical skills, marketing skills, management skills and communication skills.

#### **2.2.4 Technical skills for establishing small and medium scale enterprise**

Technical skill is one of the entrepreneurial skills potential Electrical/Electronic personnel must possess to succeed in electrical/electronic enterprise. Lyons (2012) describe technical skills as skill necessary to be successful in one's line of business. Which includes computer literacy, observatory skills, calculative skills, ability to interpret data and critical thinking to enhance problem solving skills. According to Osinem (2018), technical skills require good understanding and proficiency in specific activity, particularly one involving methods, procedures. He stated further that technical skills can be acquired through learning such as ability to prepare operational plans, troubleshooting and servicing of electrical and electronics equipment, develop electrical schematics, ability to detect fault in a circuit, ability to be able to solder and de-solder, ability to make and interpret electrical drawings and recognition of electrical and electronics symbols. Ogbuanya and Fakorede (2019) described technical skills as the ability to do something expertly well in accordance to set standards of manufacturer's instruction such as compliance to electrical/ electronic standard code. Katz (2019) viewed technical skills as one of the essential skill Needed by manager and entrepreneur. According to him, technical skills are knowledge and proficiency in certain specialized field such as engineering, computing, manufacturing, etc. Technical skills are those specialized knowledge and ability required of entrepreneur to perform the primary task inherent in particular supervisory position. All jobs require some specialty and people are required to develop their technical skills on the job. Technical skills are abilities to apply specialized knowledge or expertise. Vocational on the job training program can be used to develop this type of skill potential electrical/electronic student, personnel or craftsman must possess. Katz identified

technical skills as ability to take proper readings on instrument accurately, ability to identified different cables types, sizes and their uses and knowledge of workshop safety.

### **2.2.5 Managerial skills for establishing small and medium scale enterprise**

Managerial skills are sets of skills required by a group or person who has the responsibility to run an enterprise. According to Abiodun and Ajayi (2012), managerial skills are skills required by an entrepreneur to formulate and execute policies of an enterprise which constitute management. Nwachukwu (2018) described management as the coordination of all resources of an organization through the process of planning, organizing, directing and controlling in order to attain organizational objectives. Koontz and Wehrich (2019), defined management as the process of designing and maintaining an environment in which individuals working together or in groups efficiently in order to accomplish selected aims.

Management in all business area and organizational activities are the acts of getting people together to accomplish desire goals and objectives. Management comprises planning, organizing, staffing, leading, directing and controlling an organization (a group of one or more people or entities) for the purpose of accomplishing a goal. Resourcing encompasses the deployment and manipulation of human resources, financial resources, technological resources and natural resources. Potential entrepreneurs need to process managerial skills in order to achieve organizational goal. Lidima (2018) identified managerial skills as follows;

- i. Oversees organizational matters which include ability to manage and control situation effectively, decision making skills and problem-solving skills.
- ii. Foster relationship between members of the organization i.e ability to build trust and respect between team and colleagues and also being impartial among co-workers.
- iii. Evaluate all activities/operations in the process of goal achievement such as organization and project management skills.

- iv. Appraise employee's performance.
- v. Set a channel for effective feedback from customers.
- vi. Purchase goods, tools and equipment.
- vii. Produces demanded items before delivery date.
- viii. Manage time and meet job schedule.
- ix. Be sensitive to people's feelings.
- x. Handle difficult customer with patience and care.
- xi. Develop, interpret and implement organization policy.
- xii. Set attainable goals for organization.
- xiii. Create long term vision for the organization.
- xiv. Create an open-door policy.
- xv. Control, directs and delegate authority.
- xvi. Organize human/material resources for goals attainment.
- xvii. Maintain authority in dispensation of leadership.
- xviii. Have knowledge of needs of employee growth and development.
- xix. Evaluate the impact of personnel in the organization.

#### **2.2.6 Marketing skills for establishing small and medium scale enterprise**

Marketing skills according to Osinem (2018) are the skills which an individual acquires to enable him keep a job. Marketable implies to sell, attractive to customers or employers. He explains further that marketing skills are those skills that make individuals readily saleable in the labor market. Richard, Gary and Larry (2017) said that marketing involves identifying relevant market accurately; communicate effectively with potential customers, users and

maintaining sensitivity to marketing place. Adeoti (2017) identified the following as the part of marketing skills required by entrepreneurs to set up small and medium scale enterprises:

- i. Recognize and analyze marketing opportunities.
- ii. Promote and sell organization products.
- iii. Communicate effectively with customers.
- iv. Discuss and persuade customers
- v. Establish linkage with other business person and stockholders.
- vi. Capture and retain the attention of customers
- vii. Identifying and use market opportunities.
- viii. Understanding business law for law e.g. licensing, insurance leasing, etc.
- ix. Analyze demand and supply.
- x. Use advertisement effectively.

### **2.2.7 Communication skills for establishing small and medium scale enterprise**

Communication skills is the ability to express oneself and understand others so that ideas can be shared. It is a skill that enables an entrepreneur to convey information so as to receive and understood oneself. Communication skills in the opinion of Richard, Gary and Larry (2017) are skills entrepreneur must have to convince other that their idea is worthy of support. They stated further that entrepreneur need to others what their jobs and the goal of the venture is in order to motivate this people to work effectively. Good communication skills both oral and written are essential. According to Rao (2017) communication skill is the skill or ability to transfer one's thought, ideas and information from the sender to receiver with understanding effectively and efficiently. Therefore, communication is the transfer of information/ideas from the sender to the receiver with understanding. Adeoti (2012) identified communication skills as follows;

- i. Explaining to others what their job involves.



- ii. Understanding the needs of customers.
- iii. Communicate orally and efficiently.
- iv. Acknowledging difference in opinions.
- v. Being open minded.
- vi. Projects oneself self into the audience point of view.
- vii. Provide specific details supported with concrete examples.
- viii. Sharing of one's feelings and thoughts.
- ix. Interacts and communicate with depths of knowledge and capabilities.
- x. Accepting feedback.

### **2.3 Review of Empirical Studies**

Olufemi (2018) conducted a study on entrepreneurial competencies required in graduates in the area of technical, managerial, marketing, communication and general personal attributes competencies for establishing small and medium scale enterprises in Oyo state. The study sought to answer four research question and tested four null hypotheses. The population of the study consisted of 89 persons, comprising of 11 teachers of drafting for three technical colleges in Oyo state and 78 draftsmen of small and medium scale enterprises. No sampling was carried out since the population was of manageable size.

The major findings of the study were that technical college drafting graduates requires:

- Eighteen (19) technical competency.
- Twenty (16) managerial competency.
- Nineteen (20) marketing competency.
- Sixteen (17) general personal attribute competency.

It was recommended that government and administrator of technical colleges should organize seminars and workshop for teachers of drafting so as to enable them effectively teach the required competency to students. Also, it was recommended that the identified competency should be integrated into the curriculum of technical colleges. The study relates to present study, they are all entrepreneurial studies, difference still exist between them. Olufemi study was centered on entrepreneurial competencies required by technical colleges drafting graduates while the present study focuses on entrepreneurial skills Needed by electrical/electronic student for establishing small and medium scale enterprises in electrical/electronic.

Akinduro (2016) conducted a study on electrical installation maintenance work skills Needed by technical colleges' graduates to enhance their employability in Ondo state. Five research questions were developed in consonance with what the study sought to find out and tested for reliability with Cronbach, five null hypotheses were formulated and tested at probability of 0.05 level of significance. 134 structured questionnaire items were developed and used for the study, while 3 experts were engaged for the validation of the instrument.

The results of the five null hypotheses tested showed the respondent do differ significantly in some of their opinion. The study found that all the key skills in each area of electrical installation maintenance work skills should be emphasize by the technical teacher, while the government should provide all the tools, equipment and materials Needed to enable the technical college graduate to be practically sound and fit into the world of work. Some recommendations were made based on the finding of the study. The study relates to the present study, they are all carried out to identify skills to empower graduate youths. Akinduro's study centered on electrical installation and maintenance skills while the present study focuses on entrepreneurial skills Needed by electrical/electronic student for establishing small- and large-scale enterprise in electrical/electronic.

Hamza (2012) conducted a study on pre-service skills Needed for increasing employability of technological institution graduates. The purpose of the study is to determine relevant entry level employment skills acquired by graduates haven't gone through the technical institution program and to examine other curriculum factors associated with acquisition of entry level employment skills in technical courses. The study adapted the survey research method, the population of the study consisted of 150 graduates of technological institution and 85 supervisors drawn from industries and 29 government establishment in Kano state, Kaduna state, Minna Metropolis and Sokoto state. Data collected were analyzed using mean, correlation ratio and Pearson Product Moment Correlation Coefficient. The result of the data analyzed reveal that technology institutes graduates in industries and government establishments were equipped with basic academic skills and job search skills essential for entry level employment in the four case trade course under investigation. The study recommends an upgrade, update or replacement with the appropriate type of facilities such as; workshop tools, equipment and expandable material for use in student workshop practice.

Hence, the requirement for graduates in electrical installation maintenance work to acquire saleable entrepreneurial skills. The two studies are similar in objectives, they are studies for youth empowerment. One focuses on entrepreneurial skills Needed by electrical/electronic student for establishing small and medium scale enterprises in electrical/electronic while the other centers on the pre-service skills Needed for increasing employability of technology institution graduates. Similarity exist between the two studies. They are all carried out to improve the youth employability. The same procedures are adopted for the study. The same statistical tools are relevant for the studies.

## **2.4 Summary of Literature Review**

Technology institution in Nigeria is described as the principal vocational institution where student learn skills in various occupations. These occupations include; electrical installation and maintenance practice, electronic work, welding and fabrication, painting and decorating and radio and television repair. Skills to be taught in these occupations are arranged in modus to equip students for paid or self-employment after graduation.

Small- and large-scale entrepreneurs requires four major entrepreneur skills for effective performance. These skills include; technical, managerial, marketing and communication skills. Technical skills in electrical/electronic are described by various authors as learnable skills required for carrying out repairs, service and maintenance activities on all kinds of electronic gadgets. Various authors also reveal that managerial skills are Needed for individual to establish small and medium scale enterprise. Marketing skills is also described as inevitable skills for an entrepreneur. Possession of these skills enables one to win the hearts of customers to buy company products. Communication skills are the abilities to communicate effectively to customer about company products. Theory of enterprise also found very relevant to the study. A lot of relevant empirical studies conducted by different authors are also reviewed to give researcher the necessary directions to achieve the purpose of the study. None of the empirical study reviewed was carried out to determine the entrepreneurial skills Needed by electrical/electronic student for establishing small and medium scale enterprises in electrical/electronic in Minna Metropolis. This is the gap to be filled by this study.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

This chapter presented the procedure used in carrying out this study under the following sub-headings: design of the study; area of the study; population of the study; sample and sampling technique; instrument for data collection; validity of instrument; reliability of the instrument; method of data collection and method of data analysis.

#### **3.1 Research Design**

This study adopted a descriptive survey research design. Olaitan and Nwoke (2011) define survey research as a descriptive study in which the entire population or representative sample is studied by collecting and analyzing data from the group through the use of questionnaire. Therefore, survey design was considered suitable for the study in determining the opinion, response and perception of the respondents in the entrepreneurial skills Needed by electrical/electronic student for establishing small- and large-scale enterprise in Minna.

#### **3.2 Area of the Study**

This study was carried out to covers two (2) major institution in Minna, namely;

1. Federal University of technology, Minna.
2. Minna Innovation Institute.

#### **3.3 Population of the Study**

The population of the study comprises of electrical/electronic lecturers and students in Minna. The entire population consist of 77 electrical/electronic lecturers and student i.e. 33 lecturers and 44 students constitute the population from the area of study.

### **3.4 Instrument for data Collection**

Structured questionnaire was used as instrument for data collection. The questionnaire was made up of two parts, namely: Part 1 and Part 2. Part 1 was solicit information on personal data of the respondent, while Part 2 consist of four (4) sections A, B, C and D. Section A solicits information on technical skills Needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic, section B dwelt on managerial skills Needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic, while section C will be on marketing skills Needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic, then section D deals with communication skills Needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic. The response option of the questionnaire was structured on four-point rating scales as follows;

- Highly Needed (HN)
- Needed (N)
- Moderately Needed (MN)
- Not Needed (NN)

With each of the point rating response options valued as 4, 3, 2 and 1 assigned to them respectively.

### **3.5 Validation of the Instrument**

The instrument was validated by three (3) experts from the department of Industrial and Technology Education of Federal University of Technology, Minna. These experts were asked to scrutinize each item in the questionnaire for clarity of statements. They were also be asked to examine the appropriateness and suitability of all the items of the questionnaire in providing appropriate response or data for answer each of the research questions. The suggestions and

error pointed out by the experts was corrected before final production of the questionnaire was made.

### **3.6 Reliability of the Instrument**

The Cronbach alpha coefficient method was used to determine the internal consistency of the instrument. It was obtained by administering 5 separate copies of questionnaire each to the respondent populace in the area of study i.e. electrical/electronic lecturers, electrical/electronic draftsmen/entrepreneur and electrical/electronic students in Minna.

### **3.7 Administration of the Instrument**

The copies of the questionnaire were administered to respondents' personally by the researcher with the aid of two research assistants. The researcher gives instructions to the research assistants on how to administer the questionnaire to the respondents. The respondents was given a week to study the questionnaire and respond to it. Repeat visit was made to retrieve the completed copies of the instrument. Hundred percent returns are anticipated.

### **3.8 Method of Data analysis**

The four (4) research questions was answered using Mean, based on the four (4) point rating scale, items with mean of 2.5 or above were regarded as Needed while items with mean below 2.5 were regarded as not Needed.

## CHAPTER FOUR

### RESULTS AND DISCUSSIONS

This chapter presents the results of the data analysis for the study. The presentation was organized according to the research questions and null hypothesis formulated for the study.

#### 4.1 Research Question 1

What are the technical skills Needed by craftsmen for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis?

The data for answering research question 1 are represented in Table 1

**Table 4.1: Mean Responses of the respondent on the Technical Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.**

S/N	ITEM	X1	X2	Xt	Remark
1	Computer literacy	3.53	2.92	3.23	Needed
2	Ability to interpret Data	2.54	2.79	2.67	Needed
3	Knowledge of Workplace/workshop safety	3.07	3.19	3.13	Needed
4	Observatory sills	2.97	3.32	3.15	Needed
5	Proper use of tools and equipment in electrical/electronic industries	2.95	2.85	2.9	Needed
6	Critical thinking to enhance problem solving skills	2.86	2.73	2.8	Needed
7	Ability to read and understand circuit diagrams	3.03	3.07	3.05	Needed
8	Use of internet to get information	2.97	2.95	2.96	Needed
9	Compliance to electrical/electronic standard code	2.86	3.04	2.95	Needed
10	Troubleshooting and servicing of electrical/electronic equipment	2.77	3.15	2.96	Needed
11	Ability to prepare Operational Plans	2.56	2.65	2.60	Needed



12	Develop Electrical Schematics	2.79	2.89	2.84	Needed
13	Ability to make and Interpret Electrical drawings	3.03	3.05	3.01	Needed
14	Recognition of Electrical and Electronics Symbols and components	3.55	3.73	3.64	Needed
15	Calculative Skills	3.06	3.16	3.11	Needed
16	Ability to take proper readings on instruments Accurately	2.97	3.05	3.01	Needed
17	Ability to Identify Different Cables Types, their sizes and uses	3.3	3.23	3.27	Needed
18	Ability to detect fault in a circuit	3.09	2.86	2.98	Needed
19	Ability to be able to solder and de-solder	2.77	2.95	2.86	Needed
				N1=44	N2=33

#### Keys

N1= numbers of craftsmen

N2= numbers of teachers

X1= mean of students

X2= mean of teachers

Xt= average mean of teachers and students

The result presented in table 1 revealed that the respondents agreed with all the items with mean score ranges 2.60 to 3.64. All the items had their mean values range from 2.60 to 3.64, this shows that the mean value of each item was above the cut-off point of 2.50, indicating that all the technical skills are Needed by students for establishing small and medium scale enterprise in Minna metropolis. This signifies that all the 19 items are technical skills are Needed by students for establishing small and medium scale enterprise in Minna metropolis

## 4.2 Research Question 2

What are the managerial skills Needed by craftsmen for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis?

**Table 4.2: Mean Responses of the respondent on the Managerial Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna metropolis.**

S/N	Items	X1	X2	Xt	Remarks
1	Effective time management	3.45	3.43	3.44	Needed
2	Proper planning skills	2.94	3.04	2.99	Needed
3	Leadership skills	2.97	2.75	2.86	Needed
4	Interpersonal skills	2.64	3.24	2.94	Needed
5	Good Team work	3.26	3.09	3.18	Needed
6	Good communication skills	3.03	2.98	3.01	Needed
7	Motivation of staff and colleagues	2.88	3.11	2.99	Needed
8	Prioritizing of events in order of importance	2.97	2.93	2.98	Needed
9	Ability to organize human & other resources in the most effective and efficient ways	2.79	3.05	2.92	Needed
10	Ability to build trust and respect between team and colleagues	3.21	3.32	3.27	Needed
11	Ability to manage and control situation effectively	3.05	3.21	3.13	Needed
12	Ability to be impartial among co-workers	2.97	3.11	3.04	Needed
13	Ability to notice economic changes	3.09	3.09	3.09	Needed
14	Problem solving Skills	3.05	2.96	3.01	Needed
15	Organization and project management skills	2.97	2.89	2.93	Needed
16	Decision Making Skills	3.01	2.77	2.89	Needed

**Keys**

N1= numbers of craftsmen

N2= numbers of teachers

X1= mean of students

X2= mean of teachers

Xt= average mean of teachers and students

The result presented in table 2 reveals that the respondents with all the items with mean score ranges 2.86 to 3.44. All the items had their mean value ranged from 2.86 to 3.44. This shows that the mean value of each item above the cut-off point of 2.50 indicates that all the managerial skills are Needed by student for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis. This signifies that all the 16 items are managerial skills are Needed by student for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis.

**4.3    Research Question 3**

What are the Marketing skills Needed by craftsmen for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis?

**Table 4.3: Mean Responses of the respondent on the Marketing Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna metropolis.**

S/N	Items	X1	X2	Xt	Remarks
1	Marketing ability	3.07	3.39	3.23	Needed
2	Product promotion skills	3.46	2.99	3.23	Needed
3	Advertising skills	2.61	3.42	3.02	Needed
4	Socializing skills	2.62	3.30	2.96	Needed

5	Creative Imagination	3.11	3.37	3.24	Needed
6	Customer management skills	3.16	2.70	2.93	Needed
7	Use of e-marketing e.g. social media, SMS, etc.	2.75	3.23	2.99	Needed
8	Creative thinking to follow client guidelines	3.27	3.29	3.28	Needed
9	Ability to design email templates using brand elements	3.06	2.91	2.99	Needed
10	Innovative thinking to produce authentic content	2.91	3.02	2.97	Needed
11	Ability to communicate with clients to identify product design guidelines	2.82	3.00	2.91	Needed
12	Ability to create images to align with brand element such as color, logos	3.07	3.12	3.11	Needed
13	Product packaging skills	3.06	2.50	2.78	Needed
14	Ability to persuade new and existing customers	3.23	3.30	3.27	Needed
15	Ability to collect and store data analytics to generate leads	2.88	3.05	2.97	Needed
16	Ability to research market trends to design for various media channel	3.24	2.78	3.01	Needed
17	Engaging with customers using social media features such as likes and comments	3.15	2.75	2.95	Needed
18	Ability to create ideas for innovative content for business	3.11	2.99	3.05	Needed
19	Ability to interpret customer's insight	2.98	3.12	3.05	Needed
20	Understand how to use database to store customer information	2.99	2.86	2.93	Needed

---

N1=44    N2=33

## Keys

N1= numbers of craftsmen

N2= numbers of teachers

X1= mean of students

X2= mean of teachers

Xt= average mean of teachers and students

The result presented in table 3 shows that the respondents agree with all the items with mean scores ranging 2.78 to 3.28, all the item had their mean ranged from 2.78 to 3.28. This shows that the mean value for each item was above the cut-off point of 2.50, indicating that all the marketing skills are Needed by students for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis. this signifies that all the 20 items are marketing skills are Needed by students for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis.

### 4.4 Research Question 4

What are the Communication skills Needed by craftsmen for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis?

**Table 4.4: Mean Responses of the respondent on the Communication Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.**

S/N	Items	X1	X2	Xt	Remarks
1	Ability to convey written message clearly	3.55	3.32	3.44	Needed
2	Ability to communicate in English language clearly	2.79	2.64	2.72	Needed
3	Ability to communicate in other local dialects.	2.79	2.89	2.84	Needed

4	Understanding and responding to body language	3.03	2.95	2.99	Needed
5	Need for effective listening skills	3.06	3.16	3.11	Needed
6	Need for interpersonal skill	2.97	3.05	3.01	Needed
7	Interaction with peer group and colleagues from other organization for important update	3.19	2.79	2.99	Needed
8	Examining the true purpose of communication	3.09	3.02	3.06	Needed
9	Being able to pick the right mode of approach while communicating	2.54	2.77	2.66	Needed
10	Being able to pick the right mode of approach while communicating	2.54	2.77	2.66	Needed
11	Public speaking skills	2.66	2.74	2.70	Needed
12	Adaptation to constructive criticism and critical reasoning in communication	2.61	2.87	2.74	Needed
13	Effective communicating with range of people from all walks of life	3.11	3.21	3.16	Needed
14	Ability to navigate from casual /informal communication to formal communication	2.97	2.98	2.98	Needed
15	Ability to maintain eye contact when communicating	2.77	2.97	2.87	Needed
16	Being honest when communicating	3.03	2.79	2.91	Needed
17	Ability to empathize when communicating	3.11	3.05	3.08	Needed

### Keys

N1= numbers of craftsmen

N2= numbers of teachers

X1= mean of students

X2= mean of teachers

Xt= average mean of teachers and students

The result presented in table 4 shows that the respondents agree with all the items with mean scores ranging 2.66 to 3.44, all the item had their mean ranged from 2.66 to 3.44. This shows that the mean value for each item was above the cut-off point of 2.50, indicating that all the Communication skills are Needed by students for establishing small and medium scale enterprise in electrical/electronic in Minna Metropolis. this signifies that all the 17 items are Communication skills are Needed by students for establishing small and medium scale enterprise in electrical/electronic in Minna Metropolis.

#### 4.5 Hypothesis I

There is no significant difference in the mean response of the teachers and students on the technical skills needed by student in setting up SMEs in Electrical/Electronics.

**Table 4.5: Mean, Standard deviation and T-Cal Analysis of the Responses of the respondent on the technical Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.**

---

S/N	ITEM	SD1	SD2	T-Cal	Remark
1	Computer literacy	0.70	0.46	0.54	NS
2	Ability to interpret Data	0.59	0.60	-1.92	NS
3	Knowledge of Workplace/workshop safety	0.70	0.58	-0.79	NS

4	Observatory skills	0.59	0.54	-1.72	NS
5	Proper use of tools and equipment in electrical/electronic industries	0.61	0.51	0.76	NS
6	Critical thinking to enhance problem solving skills	0.55	0.52	1.09	NS
7	Ability to read and understand circuit diagrams	0.63	0.61	-0.29	NS
8	Use of internet to get information	0.63	0.61	0.14	NS
9	Compliance to electrical/electronic standard code	0.55	0.59	-1.48	NS
10	Troubleshooting and servicing of electrical/electronic equipment	0.52	0.57	-3.3	S
11	Ability to prepare Operational Plans	0.59	0.65	-0.68	NS
12	Develop Electrical Schematics	0.51	0.55	-0.89	NS
13	Ability to make and Interpret Electrical drawings	0.55	0.61	-0.16	NS
14	Recognition of Electrical and Electronics Symbols and components	0.66	0.45	-1.28	NS
15	Calculative Skills	0.7	0.67	-0.64	NS
16	Ability to take proper readings on instruments Accurately	0.63	0.61	-0.58	NS
17	Ability to Identify Different Cables Types, their sizes and uses	0.7	0.71	0.45	NS
18	Ability to detect fault in a circuit	0.56	0.51	1.89	NS
19	Ability to be able to solder and de-solder	0.52	0.61	-1.55	NS

---

N1=44    N2=33

Keys

NS= No significant difference



S=Significant

N1= numbers of craftsmen

N2= numbers of teachers

SD1= standard deviation of student

SD2= standard deviation of teachers

T-Cal = t-test calculated

T-Critical = $\pm 1.99$

The result presented in table 5 revealed that calculated t-cal of all the items except one item (10) were less than the critical value ( $\pm 1.99$ ) at 0.05 level of significance. Therefore, the null hypotheses which tells that there are no significance differences in the mean responses of the teachers and students on the technical skills needed by electrical/electronic student in setting up SMEs in electrical/electronic, is accepted at 0.05 level of significant.

#### 4.6 Hypothesis II

There is no significant difference in the mean response of the teachers and students on the managerial skills needed by student in setting up SMEs in Electrical/Electronics.

**Table 4.6: Mean, Standard deviation and T-Cal Analysis of the Responses of the respondent on the managerial Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.**

S/N	Items	SD1	SD2	T-Cal	Remarks
1	Effective time management	0.50	0.75	0.17	NS
2	Proper planning skills	0.59	0.77	-0.73	NS
3	Leadership skills	0.59	0.75	1.62	NS

4	Interpersonal skills	0.57	0.66	-1.09	NS
5	Good Team work	0.58	0.63	1.31	NS
6	Good communication skills	0.59	0.64	0.38	NS
7	Motivation of staff and colleagues	0.58	0.55	-1.81	NS
8	Prioritizing of events in order of importance	0.59	0.66	0.30	NS
9	Ability to organize human & other resources in the most effective and efficient ways	0.63	0.61	-1.87	NS
10	Ability to build trust and respect between team and colleagues	0.59	0.54	-0.93	NS
11	Ability to manage and control situation effectively	0.65	0.55	0.28	NS
12	Ability to be impartial among co-workers	0.59	0.65	-1.06	NS
13	Ability to notice economic changes	0.60	0.52	0.75	NS
14	Problem solving Skills	0.61	0.59	0.67	NS
15	Organization and project management skills	0.59	0.82	0.58	NS
16	Decision Making Skills	0.61	0.71	1.16	NS

---

#### Keys

NS= No significant difference

N1= numbers of craftsmen

N2= numbers of teachers

SD1= standard deviation of student

SD2= standard deviation of teachers

T-Cal = t-test calculated

T-Critical = $\pm 1.99$

The result presented in table 6 revealed that calculated t-cal of all the items were less than the critical value ( $\pm 1.99$ ) at 0.05 level of significance. Therefore, the null hypotheses which tells that there are no significance differences in the mean responses of the teachers and students on the managerial skills needed by electrical/electronic student in setting up SMEs in electrical/electronic, is accepted at 0.05 level of significant.

#### 4.7 Hypothesis III

There is no significant difference in the mean response of the teachers and students on the marketing skills needed by student in setting up SMEs in Electrical/Electronics.

**Table 4.7: Mean, Standard deviation and T-Cal Analysis of the Responses of the respondent on the marketing Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.**

S/N	Items	SD1	SD2	T-Cal	Remarks
1	Marketing ability	0.70	0.56	-1.11	NS
2	Product promotion skills	0.55	0.71	3.72	S
3	Advertising skills	0.58	0.71	-0.95	NS
4	Socializing skills	0.58	0.64	-5.24	S
5	Creative Imagination	0.65	0.60	-1.82	NS
6	Customer management skills	0.64	0.59	1.07	NS
7	Use of e-marketing e.g. social media, SMS, etc.	0.65	0.66	-1.32	NS
8	Creative thinking to follow client guidelines	0.59	0.53	-0.16	NS

9	Ability to design email templates using brand elements	0.70	0.68	0.96	NS
10	Innovative thinking to produce authentic content	0.71	0.73	-0.69	NS
11	Ability to communicate with clients to identify product design guidelines	0.66	0.71	-1.21	NS
12	Ability to create images to align with brand element such as color, logos	0.70	0.65	-0.32	NS
13	Product packaging skills	0.70	0.51	1.28	NS
14	Ability to persuade new and existing customers	0.57	0.59	-0.57	NS
15	Ability to collect and store data analytics to generate leads	0.65	0.66	-1.17	NS
16	Ability to research market trends to design for various media channel	0.58	0.60	3.58	S
17	Engaging with customers using social media features such as likes and comments	0.64	0.66	0.73	NS
18	Ability to create ideas for innovative content for business	0.65	0.71	0.82	NS
19	Ability to interpret customer's insight	0.66	0.60	-0.97	NS
20	Understand how to use database to store customer information	0.68	0.67	0.86	NS

#### Keys

NS= No significant difference

S= Significant

N1= numbers of craftsmen

N2= numbers of teachers

SD1= standard deviation of student

SD2= standard deviation of teachers

T-Cal = t-test calculated

T-Critical = $\pm 1.99$

The result presented in table 7 revealed that calculated t-cal of all the items were less except three items (2,4&16) than the critical value ( $\pm 1.99$ ) at 0.05 level of significance. Therefore, the null hypotheses which tells that there are no significance differences in the mean responses of the teachers and students on the marketing skills needed by electrical/electronic student in setting up SMEs in electrical/electronic, is accepted at 0.05 level of significant.

#### 4.8 Hypothesis IV

There is no significant difference in the mean response of the teachers and students on the communication skills needed by student in setting up SMEs in Electrical/Electronics

**Table 4.8: Mean, Standard deviation and T-Cal Analysis of the Responses of the respondent on the communication Skills Needed by electrical/electronic student for establishing Small and Medium Scale Enterprise in electrical/electronic in Minna Metropolis.**

S/N	Items	SD1	SD2	T-Cal	Remarks
1	Ability to convey written message clearly	0.66	0.54	1.61	NS
2	Ability to communicate in English language clearly	0.59	0.65	1.13	NS
3	Ability to communicate in other local dialects.	0.59	0.82	-0.72	NS
4	Understanding and responding to body language	0.59	0.59	0.61	NS
5	Need for effective listening skills	0.59	0.57	-0.77	NS
6	Need for interpersonal skill	0.63	0.61	-0.58	NS

7	Interaction with peer group and colleagues from other organization for important update	0.66	0.60	1.76	NS
8	Examining the true purpose of communication	0.64	0.73	0.48	NS
9	Being respectful when communicating	0.59	0.71	-1.71	NS
10	Being able to pick the right mode of approach while communicating	0.55	0.71	-1.82	NS
11	Public speaking skills	0.61	0.52	-0.61	NS
12	Adaptation to constructive criticism and critical reasoning in communication	0.58	0.51	-2.07	NS
13	Effective communicating with range of people from all walks of life	0.62	0.55	-0.74	NS
14	Ability to navigate from casual /informal communication to formal communication	0.55	0.71	-0.08	NS
15	Ability to maintain eye contact when communicating	0.60	0.71	-1.47	NS
16	Being honest when communicating	0.59	0.60	1.84	NS
17	Ability to empathize when communicating	0.65	0.66	0.41	NS

### Keys

NS= No significant difference

N1= numbers of craftsmen

N2= numbers of teachers

SD1= standard deviation of student

SD2= standard deviation of teachers

T-Cal = t-test calculated

T-Critical = $\pm 1.99$

The result presented in table 8 revealed that calculated t-cal of all the items were less than the critical value ( $\pm 1.99$ ) at 0.05 level of significance. Therefore, the null hypotheses which tells that there are no significance differences in the mean responses of the teachers and students on the communication skills needed by electrical/electronic student in setting up SMEs in electrical/electronic, is accepted at 0.05 level of significant.

## **4.9 Findings of the Study**

The following findings emerged from the study based on the research questions

- A. Technical skills Needed by craftsmen for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis.
  1. Computer literacy
  2. Critical thinking to enhance problem solving
  3. Ability to read and understand circuit
  4. Trouble shooting skills
  5. Workshop/workplace safety
  6. Use of computer and internet to get information
  7. Proper use of tools and equipment in electrical/electronic industries
  8. Observatory skills
  9. Compliance and utilization of standard code
  10. Ability to interpret data
  11. Ability to prepare Operational Plans
  12. Develop Electrical Schematics
  13. Ability to make and Interpret Electrical drawings
  14. Recognition of electrical and electronics symbols and components
  15. Calculative Skills
  16. Ability to take proper readings on instruments accurately
  17. Ability to Identify Different Cables Types, their sizes and uses
  18. Ability to detect fault in a circuit

19. Ability to be able to solder and de-solder

B. Managerial skills Needed by craftsmen for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis

1. Effective time management
2. Proper planning skills
3. Leadership skills
4. Interpersonal skills
5. Good Team work
6. Good communication skills
7. Motivation of staff and colleagues
8. Prioritizing of events in order of importance
9. Ability to organize human & other resources in the most effective and efficient ways
10. Ability to build trust and respect between team and colleagues
11. Ability to be impartial among co-workers
12. Ability to manage and control situation effectively
13. Ability to notice economic changes
14. Problem solving Skills
15. Organization and project management skills
16. Decision Making Skills

C. Marketing skills Needed by craftsmen for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis

1. Marketing ability
2. Product promotion skills
3. Advertising skills
4. Socializing skills
5. Creative imagination skills
6. Customer management skills
7. Use of e-marketing e.g. social media, SMS, etc
8. Creative thinking to follow client guidelines
9. Ability to design email templates using brand elements



10. Innovative thinking to produce authentic content
11. Ability to communicate with clients to identify product design guidelines
12. Ability to create images to align with brand element such as color, logos
13. Product packaging skills
14. Ability to persuade new and existing customers
15. Ability to collect and store data analytics to generate leads
16. Ability to research market trends to design for various media channel
17. Engaging with customers using social media features such as likes and comments
18. Ability to create ideas for innovative content for business
19. Ability to interpret customer's insight
20. Understand how to use database to store customer information

D. Communication skills Needed by craftsmen for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis

1. Ability to convey written message clearly
2. Ability to communicate in English language clearly
3. Ability to communicate in other local dialects
4. Understanding and responding to body language
5. Need for effective listening skills
6. Need for interpersonal skills
7. Interaction with peer group and colleagues from other organization for important update
8. Examining the true purpose of communication
9. Being able to pick the right mode of approach while communicating
10. Being respectful when communicating
11. Public speaking skills
12. Adaptation to constructive criticism and critical reasoning in communication
13. Effective communicating with range of people from all walks of life
14. Ability to navigate from casual /informal communication to formal communication
15. Ability to maintain eye contact when communicating
16. Being honest when communicating
17. Ability to empathize when communicating

#### **4.10 Discussion of Findings**

The findings of this study according to the research question one revealed that 19 technical skills Needed by students for establishing small and medium scale enterprise. Among these technical skills are: computer literacy, critical thinking to enhance problem solving ability, to read and understand circuit, adequate troubleshooting skills of electrical/electronic circuits, adequate safety practice. The use of internet in sourcing for information, proper use of tools and equipment in electrical/electronic industries. Compliance and utilization of standard codes, adequate observatory and Ability to interprets data., Ability to be able to solder and desoldering, Calculative skills, these findings are in agreement with the opinion of lidimma (2018) that technical skills are bases in which other entrepreneurial skills depend. The author stated that technical skills determine the future of any enterprise. Ogbuanya and fakorede (2019) described technical skills as the ability do something expertly and well, in accordance to set standard or manufacturer instruction. Katz (2019) viewed technical skills as one of the essential skills Needed by manager ad entrepreneur. According to him, technical skills are knowledge and proficiency in certain specialized field, such as engineering, computers, financial and managerial, accounting or manufacturing.

The findings of this study according to the research question two revealed that revealed 16 managerial skills Needed by students for establishing small and medium scale enterprise. These skills include effective time management, leadership skills, interpersonal skills, motivation of staffs and colleagues, patronizing of events in order of importance, ability to manage and control situation effectively and ability to notice economic signal. This finding is in agreement with the opinion of Richard, Gray and Larry (2017) that managerial skills are type of skills required by group who has responsibility to run an enterprise. The author stated that the group must understand when and how to oversee organizational matters, foster relationship among members of the organization and evaluate all operation in the process of goal attainment. The findings also in agreement with the opinion of Abiodun and Ajayi (2012), that managerial skills are tactics required by an entrepreneur to formulate and execute policies of and enterprise which constitute management.

The findings of this study according to the research question three revealed that 20 marketing skills Needed by students for establishing small and medium scale enterprise in Minna Metropolis. These marketing skills includes; need for market research and ability, product production skills, advertising skills and customers relationship managing skills, adequate use

of social skills, ability to follow up customers through various skills (i.e. phone calls, SMS, and internet). Creativity and imagination, customer experience management skills and empathy with customers (seeing through customer's eyes).

Employing total quality management approach (TQM), this finding is in agreement with the opinion of Osimen (2018) that marketing skills such as recognizing marketing opportunities, analyzing marketing opportunities, promoting and selling organization product are important for successfully running of small and medium scale enterprises. The finding is also in line with opinion of Anyokoha (2019) who stated that knowledge of account, knowing of cost, ability to interpret financial statement and ability to acquire the skills of preparing financial statement are required by entrepreneurs.

The finding of this study according to the research question four revealed that 17 communication skills Needed by electrical/electronic students for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis, among the communication skills Needed by student includes; ability to convey written messages clearly, ability to communicate in English language effectively, ability to communicate in other Nigerian local language ( i.e. Yoruba, Hausa and Igbo), personal appearance, adequate response to body language, interpersonal skills, effective listening are all important for enterprise update and establishment.

This finding is in agreement with the opinion of Agbogidi (2017) that communication skills is a major requirement for improving and establishing of small and medium scale enterprises. The author added that an entrepreneur must know how to prepare meaningful handbill containing information about the enterprise goods and services, understands customer's needs, communicate orally with various group, actively listen to people and understands the business barrier.

There was no significant difference in the mean responses of the Lecturer, electrical/electronic student and craftsmen on the technical skills Needed by electrical and electronic student in establishing small and medium scale enterprise in Minna metropolis. The finding also indicate that the respondents had the same opinion on the various technical skills.

There is no significant difference in the mean responses of the Lecturer, electrical/electronic student and craftsmen on the managerial skills Needed by electrical/electronic student for

establishing small and medium scale enterprise in electrical/electronic in Minna metropolis. This finding indicated that the respondents had the same view on the various managerial skills.

There is no significant difference in the mean responses of the Lecturer, electrical/electronic student and craftsmen on the marketing skills Needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis. The finding also showed and indicated that the various marketing skills are Needed for establishing small and medium scale enterprise.

There is no significant difference in the mean responses of the Lecturer, electrical/electronic student and craftsmen on the communication marketing skills Needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic in Minna metropolis. This finding showed that the respondent had the same view on the various communication skills.

## CHAPTER FIVE

### CONCLUSION AND RECOMMENDATION

This is the representation of the summary, restatement of the problem, conclusion, educational implication of the findings, recommendations for implementation and suggestions for further research.

#### 5.1 Summary of the Study

Critical review and observation of the module and policy prepared by National Board for Technical Education reveals deficiency in technical colleges and inefficient and inadequate implementation in polytechnics and technological universities in entrepreneurial skills which is a vital requirement for self-reliance and employment of graduates. Deficiencies and inadequate implementation of the entrepreneurial skills in the modules have made most graduates of electrical/electronic trade unemployed after schooling. This shortfall negates the overall objectives of technical education as graduates could be joining the already populated and over-saturated labour market and end up being unemployed because they do not possess the knowledge of entrepreneurial skills for establishing small and medium scale business.

The educational system do not guarantee the success of graduates in their occupational areas because of lack and inadequate entrepreneurship knowledge. Government and some private enterprise that were employing graduates of higher institutions in terms of technical services in Minna Metropolis now prefer to contact those technicians and craftsmen trained under the informal sector (Apprenticeship Programme). Lack of entrepreneurial skills by graduates has resulted to a situation whereby, most graduates hope solely on employment which are not forthcoming but could establish and manage an electrical/electronic enterprise if they have and possess entrepreneurial skills and knowledge. Most of the graduates employed by industries are unskilled in their area of specialization due to low quality instruction received while in school. To compensate for this deficiency and inadequate implementation in the modules of technical education to reduce unemployment among graduates in this trade, there is need to investigate the entrepreneurial skills Needed by students in electrical/electronic for establishing small and medium scale enterprises after graduation. Specifically, the study sought to identify:

1. Technical skills Needed by students for establishing small and medium scale enterprises in electrical/electronic in Minna Metropolis.
2. Managerial skills Needed by students for establishing small and medium scale enterprises in electrical/electronic in Minna Metropolis.
3. Marketing skills Needed by students for establishing small and medium scale enterprises in electrical/electronic in Minna Metropolis.
4. Communication skills Needed by students for establishing small and medium scale enterprises in electrical/electronic in Minna Metropolis.

## **5.2 Implication of the Study**

The findings of the study had implication for government, teachers of electrical/electronic, students and craftsmen. Government agency such as National Board for Technical Education will have to integrate the identified skills in the study into the curriculum of technical colleges and ensure proper and adequate implementation in polytechnics and universities across the nation. The government will provide necessary facilities for the implementation of the skills at various level. Teachers and lecturers will re-train and equip themselves for the successful implementation of the new curriculum. Craftsmen will visit and enroll in entrepreneurial training facilities and centers to possess entrepreneurship knowledge.

## **5.3 Contribution to Knowledge**

The essence of this study is to identify the entrepreneurial skills Needed by students for establishing small and medium scale enterprises in electrical/electronic in Minna Metropolis. Specifically, the study emphasizes and contributes to knowledge by identifying the following:

1. Technical skills Needed by students for establishing small and medium scale enterprises in electrical/electronic.
2. Managerial skills Needed by students for establishing small and medium scale enterprises in electrical/electronic.

3. Marketing skills Needed by students for establishing small and medium scale enterprises in electrical/electronic.
4. Communication skills Needed by students for establishing small and medium scale enterprises in electrical/electronic.

## **5.4 Conclusion**

Based on the findings of the study, the following conclusion were drawn:

Technical and technology institution in Nigeria are setup to equip individuals in different occupation for either paid or self-employment, but observation reveals that entrepreneurial skill which is the major requirement for self-employment of graduate is not properly and efficiently integrated and has most of the graduates in electrical/electronic unemployed after school. Lack of entrepreneurial skills has resulted in a situation whereby most of the graduate hope solely on employment and not forthcoming but could establish an electrical/electronic enterprise if they possess entrepreneurial skills. This study is now setup in the area of the shortcomings. The study now then identifies relevant technical, marketing, managerial and communication skills for training of electrical/electronic students.

## **5.5 Recommendation**

Based on the findings of the study, the following recommendation were made:

1. All the skills identified in the study should be integrated and incorporated into the module to train electrical/electronic students.
2. The facilities for effective implementation of the identified skills should be provided by the government.
3. Workshop and seminars should be organized for the teachers of electrical/electronic in technical education institutions in order to build their capability and capacity.

## **5.6 Suggestion for Further Studies**

The following are suggested for further studies:

1. Entrepreneurial skills Needed by craftsmen for establishing small and medium scale enterprises in electrical/electronic in other states.
2. Entrepreneurship skills Needed by student in other trades for establishing small and medium scale enterprises in other states.
3. Capability and capacity building in teachers, lecturers and instructors of electrical/electronic for effective teaching to students and craftsmen in Minna Metropolis.



## REFERENCES

- Abiodun and Ajayi. (2012). Production Management Skills required by Secondary School graduates for employment in cocoa enterprises in Ondo State. An Unpublished MEd Thesis, Department of Vocational Teacher Education.
- Adeoti, E. E. (2017). Effect of Constructivist Approach on students' performance in Building Construction Trade in Technical Colleges of Nasarawa, Benue, and Plateau State. Department of Vocational. Teacher Education. An Unpublished MEd Thesis
- Agbogidi, O. (2017). Safety practices and skill acquisition in technical college laboratories in Akwa Ibom State. Art Unpublished MEd Thesis, Department of Vocational Teacher Education, University of Nigeria. Nsukka
- Akinduro. I. (2016). Electrical Installation and Maintenance work skills needed by technical college graduates to enhance their employability in Ondo State. Art Unpublished MEd Project, Department of Vocational Teacher Education.
- Anyakoha, J. N. (2019). Educational Administration and supervision. Associateship Certificate in Education Series. Ibadan. Heinemann Books Ltd.
- Bashir Ahmad Fida. (2018). Administration, Supervision and Planning for Education Managers. Lagos: Krown prince publication.
- Bayere, F. S. (2010). Safety practice skill needs of metalwork students in technical colleges in Ondo State. An Unpublished MEd Thesis.
- Bayere. J .A, Aturuka. O.J. & Adegoke, E. O. (2011). Improvement needs of graduates of technical colleges in motor vehicle mechanic practice for employment in modern Nigeria. Journal of vocational technology,
- Bayere (2012) carried out a study to determine work skill improvement needs of graduate of technical colleges in electrical installation and maintenance practice for employment in the let century Nigeria. Department of adult and vocational education
- Bayere, J. A. Ochepe & Miller, 10. (2013). Competency improvement needs of supervisors in the supervision of teachers in technical colleges in south west zone of Nigeria. A Paper presented at Annual Conference of NERA held in Faculty of Education, University of Nigeria
- Bayere, J. (2016). Safety Practice Skills Needed by Electrical/Electronic Students in Technical Colleges in Ekiti state. An Unpublished PDGTE project report, Department of vocational teacher education.
- Cole, A.H and Evans, ND. (2014). Handbook for Effective supervision of Instruction. New Jersey: Prentice-Hall Inc. Englewood Cliffs.
- Central Bank of Nigeria Annual report (2016)

- Daniel, Ngwira, fessaha. (2014,2015). Vocational Industrial Education. Bauchi: League of Researchers in Nigeria.
- Doomooei, Maxey, Watkins. (2018). Supervisory Behavior in Education. New Jersey: Prentice-Hall Inc. Englewood.
- Drucker Peter (2014). Innovation and Entrepreneurship, Harper & Row, New York, p.143.
- Ede, E. O, Miller; I. O. & Bayere, J. A. (2016). Work Skill Improvement Needs of Graduates of Technical Colleges in Machine Shop Practice for Demand Driven Employment in South West Zone of Contemporary Nigeria. Being a Paper Presented in Nigerian Vocational Association Conference (NVA) Held in University of Nigerian Nsukka in 2010.
- Ede, Eboh. And Olaitan, O. O. (2019). Management Resource Responsibilities of Auto mechanic Technology Teachers in Technical Colleges in South Western States of Nigeria. Institute of Education Journal. 20 (1), 135I47
- Fayad C.T.O. (2018). Curriculum innovation for sustainable Technology Education in Nigeria: Training and Retraining of Nigerian Technologist. A paper presented at Nigerian Association Q Teachers 0 Technology (NA TT).
- Federal Government of Nigeria (2013). National Policy on Education. Lagos NERDC Press
- Federal Ministry of Education (2014). May June 2012 NTC/NBC examinations Report. Benin City: Festa printing press.
- FGN, UNESCO, ILO (2012). National Policy on Education. Lagos; NERDC Press.
- Frauzi, J. S. (2010). Administration of Public Education, New York: Harper and Row Publisher.
- Hamza, A. (2012). Pre-service Skills Need for increasing Employability of Technical College Graduates.
- Hisrish, Peter. (2015). Safety practice skills needed by trainees and employees of block laying and constructing occupation in the building industry in Imo State. An Unpublished MEd Project. Department of Vocational Teacher Education. (University of Canada, Toronto.
- Katz, M. (2019). Principles and Methods in Vocational Technical Education, Education. Germany: University Trust Publishers.
- Kootnz, weihrich (2019). Global perspective on management, Harvard university press
- Kwabena, N.S. (2011). Entrepreneurship theories and empirical research: A summary review of the literature. European Journal of Business and Management, 3(6), 1-9.
- Lidima, B. G. (2018). Entrepreneurial Competencies Required By Technical College Drafting Graduates for Establishing Small and Medium Scale Enterprises In Plateau State. An

unpublished project report submitted to the Department of Vocational Teachers Education, University of Nigeria

Lyons, OM. (2012). *Measurement and Evaluation in Education*. Paris, France: Pacific Publishers Limited.

Michiko, H. L. (2019). *An assessment of training received in Automobile technology by graduates of technical colleges in Adamawa and Gombe States*. An Unpublished MED Thesis, Department of Vocational Teacher Education, University of Nigeria..

National Board for technical education (2011). *Building Technology Curriculum*. Kaduna: NABTE.

National Board for technical education (2013). *Building Technology Curriculum*. Kaduna: NABTE

NBTE, UNESCO (2013). *National Policy on Education*. Lagos; NERDC Press.

Nwachukwu, C.C (2015) *The practice of Entrepreneurship*. Fnu: Africana-Febs Publisher

Ogbuanya, T.C., J.A. Bakare & B. Zakka (2019). *Mechatronics skills required for integration into electrical/electronic engineering technology programme in polytechnics for sustainable employment of graduates in contemporary Nigeria*.

Ogwumike, B. A (2018). *Curriculum Development and Educational Technology*. Markudi: Onaivi Printing and Publishing Co. Limited.

Olaitan, S. O., Nwachukwu, C. C., Igbo, C.A., Onyemaechi, G.A. & Ekong, A.O.(2019). *Curriculum Development and Management in Vocational Technical Education*. Onitsha: Cape Publishers International limited.

Olaitan, S. O. (2019). *The potentials of vocational and technical education for empowering youths and vulnerable adults with work skills for poverty reduction in Nigeria*. Keynote address presented at 3rd national conference of school of vocational education, federal college of education (technical) Akoka, Yaba, Lagos on Vision 2020 on human capacity building and empowerment of vulnerable.

Olaitan, SO. (2016). *Vocational and Technical Education in Nigeria (Issues and Analysis)*. Onitsha: Noble graphic press.

Olaitan. S. O. (2013). *Understanding Curriculum*. Nsukka: Ndudim Publishers.

Osinem, O. M. (2018). *Principles and Methods in Vocational and Technical Education*.

Paul, EC. (2015). *Introduction to Research Methodology*. Enugu: Cheston Publishers

Rao. R.K., *Small Industries in the Seventies*, Vikas Publications, Delhi, 2016. p.14

Raynard, Maya. (2010). *The World Book Dictionary* vol. [1. London: The World Encyclopedia.

- Richard, Gray. And Larry. (2014, 2017). *The Making of a Curriculum. (Theory, Process, Product and Evaluation)*. U.K: Cape Publishers International Limited.
- Rosalina, J. M. (2019). *The Supervision of Personnel*. New Jersey: Prentice-Hall Inc. England.
- Sanni, O. (2012). *Industry-Based skill Competencies Required of Graduates of Tertiary Technical Institutions for Employment in Electrical/Electronic Industries in Lagos State*. An Unpublished MEd Project.
- Schumpeter, J.A., *Economic Theory and Entrepreneurial History in Explorations in Enterprise*, Harvard University Press, Cambridge, 1965
- Smith, Perks, GO (2016). *The Good Teacher: Establishing the Criteria for Identification and Methodology of Instruction*. Owerri: Totan Publishers limited Wikipedia (2009). *Management Techniques*. Retrieved on 13th June, 2009 from [www.cnwikipedia.ng/wiki/management](http://www.cnwikipedia.ng/wiki/management).
- UNIDO (2016). *Vocational and Technological Education in developing Countries: the place and role of the teacher*. Ebonyi Technology and Vocational Education Journal. 1(1).
- Vosloo. (2014). *Invest in Technical Education In Amechi, N.F. Mechanism for Improving the Training and Retention of Technical Teachers for Technical Colleges in Anambra State*.
- Wilson.K. (2018). *Supervision for Better Schools*. New Jersey: Prentice-Hall. Inc. Englewood Cliff.
- Zahra A. (2015). *Safety practice skills needed by woodwork students of technical colleges In Kaduna State*. Art Unpublished MEd Project Submitted to the Department of Vocational Teacher Education, University Nigeria.

APPENDIX I

**REQUEST LETTER TO VALIDATORS**

Industrial and Technology Education  
Department  
Federal University of Technology,  
P.M.B. 65,  
Minna,  
12<sup>th</sup> January, 2023.

Dear Sir,

**REQUEST FOR FACE VALIDATION OF INSTRUMENT FOR ASSESSING THE  
ENTREPRENEURIAL SKILLS NEEDED BY ELECTRICAL/ ELECTRONICS  
STUDENT FOR ESTABLISHING SMALL AND MEDIUM SCALE ENTERPRISE IN  
ELECTRICAL/ELECTRONICS IN MINNA METROPOLIS.**

I am an undergraduate student of the above-named address currently undertaking a study on the topic: ENTREPRENEURIAL SKILLS NEEDED BY ELECTRICAL/ ELECTRONICS STUDENT FOR ESTABLISHING SMALL AND MEDIUM SCALE ENTERPRISE IN ELECTRICAL/ELECTRONICS IN MINNA METROPOLIS.

Attached is the draft copy of the instrument. As an expert in this area, your assistance is hereby solicited to enable me accomplish this task. Kindly go through the item to verify their clarity, relevance and appropriateness in the use of language. In addition to this you can also make further suggestions that will improve the status and quality of the instrument. Your contribution to this work is highly appreciated.

Thanks

Yours faithfully,

**OMIRINDE, MUTHIMAINAT O**

**2016/1/63720TI**

APPENDIX II  
**FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA**  
**SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION**  
**DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION**  
QUESTIONNAIRE ON ENTREPRENEURIAL SKILLS NEEDED BY  
ELECTRICAL/ELECTRONIC STUDENT FOR ESTABLISHING SMALL AND MEDIUM  
SCALE ENTERPRISE IN ELECTRICAL/ELECTRONIC IN MINNA METROPOLIS.

INSTRUCTION: This research work on entrepreneurial skills needed by electrical/electronic student for establishing small and medium scale business in electrical/electronic in Minna Metropolis.

Kindly complete the questionnaire by ticking the column [  ] that represents your perception about the topic using four (4) point rating scale

- Highly Needed (HN)
- Needed (N)
- Moderately Needed (MN)
- Not Needed (NN)

Please Be as honest as you can, all information provided will be highly confidential and strictly used for the purpose of research work.

**Research questions**

1. What are the technical skills needed by student in setting up SMEs in Electrical/Electronics?
2. What are the managerial skills needed by student in setting up SMEs in Electrical/Electronics?
3. What are the marketing skills needed by student in setting up SMEs in Electrical/Electronics?
4. What is the communication skills needed by student in setting up SMEs in Electrical/Electronics?

**PART 1: Personal Data.**

- Electrical/Electronic lecturer [  ]
- Student [  ]

## PART 2

INSTRUCTION(S): below is a list of statements to ascertain your opinion on the entrepreneurial skills needed for establishing small and medium scale enterprise in electrical/electronic in Minna Metropolis.

### SECTION A

What are the technical skills needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic?

S/N	TECHNICAL SKILLS	HN	N	MN	NN
1	Computer literacy				
2	Ability to interpret data				
3	Knowledge of workplace/workshop safety				
4	Observatory skills				
5	Proper use of tools and equipment in electrical/electronic industries				
6	Critical thinking to enhance problem solving				
7	Ability to read and understand circuit				
8	Use of internet to get information				
9	Compliance and utilization of standard code				
10	Troubleshooting, repair, installation and servicing of electrical/electronic equipment.				
11	Ability to prepare operational plans				
12	Develop Electrical Schematics				
13	Ability to make and interpret electrical drawings				
14	Recognition of Electrical and Electronics symbols and components				
15	Calculative skills				
16	Ability to take proper readings on instrument accurately				
17	Ability to identify different cables types, their sizes and uses				
18	Ability to detect fault in a circuit				
19	Ability to be able to solder and desoldering				

## SECTION B

What are the managerial skills needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic?

S/N	MANAGERIAL SKILLS	HN	N	MN	NN
1	Effective time management				
2	Proper planning skills				
3	Leadership skills				
4	Interpersonal relationship skills				
5	Good team work skills				
6	Prioritizing of events in order of importance				
7	Ability to manage & control situation effectively				
8	Ability to notice economic changes				
9	Ability to build trust and respect between team and colleagues				
10	Motivation of staff and colleagues				
11	Ability to be impartial among co-workers				
12	Good communication skills				
13	Problem solving Skills				
14	Organization and project management skills				
15	Ability to organize human & other resources in the most effective and efficient ways				
16	Decision Making Skills				



## SECTION C

What are the marketing skills needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic?

S/N	MARKETING SKILLS	HN	N	MN	NN
1	Marketing Ability				
2	Product promotion skills				
3	Advertising skills				
4	Socializing skills				
5	Creative imagination				
6	Customer management skills				
7	Use of e-marketing e.g. social media, SMS, etc.				
8	Creative thinking to follow client guidelines				
9	Ability to design email templates using brand elements				
10	Innovative thinking to produce authentic content				
11	Ability to communicate with clients to identify product design guidelines				
12	Ability to create images to align with brand element such as color, logos				
13	Product packaging skills				
14	Ability to persuade new and existing customers				
15	Ability to collect and store data analytics to generate leads				
16	Ability to research market trends to design for various media channel				
17	Engaging with customers using social media features such as likes and comments				
18	Ability to create ideas for innovative content for business				
19	Ability to interpret customer's insight				
20	Understand how to use database to store customer information				

## SECTION D

What are the communication skills needed by electrical/electronic student for establishing small and medium scale enterprise in electrical/electronic?

S/N	COMMUNICATION SKILLS	HN	N	MN	NN
1	Ability to convey written message clearly				
2	Ability to communicate in English language clearly				
3	Ability to communicate in other local dialects				
4	Understanding and responding to body language				
5	Needs for effective listening skills				
6	Needs for interpersonal skills				
7	Interaction with peer group and colleagues from other organization for important update				
8	Examining the true purpose of communication				
9	Being able to pick the right mode of approach while communicating				
10	Being respectful when communicating				
11	Public speaking skills				
12	Adaptation to constructive criticism and critical reasoning in communication				
13	Effective communicating with range of people from all walks of life				
14	Ability to navigate from casual /informal communication to formal communication				
15	Ability to maintain eye contact when communicating				
16	Being honest when communicating				
17	Ability to empathize when communicating				