

**ENTREPRENEURIAL AND OCCUPATIONAL SKILLS NEEDED FOR SELF-
EMPLOYMENT BY WOODWORK GRADUATES OF FUTMINNA**

BY

SUNDAY, Yakubu

2014/1/51462TI

**DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION,
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE.**

July 2021.

**ENTREPRENEURIAL AND OCCUPATIONAL SKILLS NEEDED FOR SELF-
EMPLOYMENT BY WOODWORK GRADUATES OF FUTMINNA**

BY

SUNDAY, Yakubu

2014/1/51462TI

**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF INDUSTRIAL
AND TECHNOLOGY EDUCATION, SCHOOL OF TECHNOLOGY EDUCATION,
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE, IN
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF
BACHELOR OF TECHNOLOGY (B. TECH) DEGREE IN INDUSTRIAL AND
TECHNOLOGY EDUCATION.**

July, 2021

DECLARATION

I, SUNDAY, YAKUBU, with matriculation number 2014/1/51462TI, an undergraduate student of the department of Industrial and Technology Education, certify that the work embodied in this project is original and has not been submitted in part or full for any other diploma or degree of this or any other University.

SUNDAY, Yakubu

.....

2014/1/51462TI

.....

Sign and Date

CERTIFICATION

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

Dr. W. B. Kareem

Project Supervisor

Signature and Date

Dr. I.Y. Umar

Head of Department

Signature and Date

External Examiner

Signature and Date

DEDICATION

With profound joy and gratitude in my heart, I dedicate this project to God Almighty for His Unshakable and Unbreakable Faithfulness. His Divine and constant guidance in my life has made this project a reality today. Thank God.

ACKNOWLEDGEMENTS

My enormous appreciation goes to God the giver of life for his grace and mercy throughout my stay in the university and also, persons, too numerous to mention here who have contributed in grooming me and have touched my life socially, spiritually, academically and otherwise.

I appreciate my dad Mr. Yakubu Shemang and my mothers' Mrs. Lydia Yakubu and Mrs. Alisabatu Patrick for their support and guardians throughout the years. I also appreciate my siblings for their encouragements, especially my elder sisters Miss Janet Yakubu and Mrs. Grace Bege I appreciate you all and always love you. May God continue to bless you all.

I acknowledge and appreciate my dear friends and colleagues in and outside this institution for their wonderful support throughout the years in this institution. My special appreciation also goes to Boss Badmos, Boss Zaki, Boss Omiezy, Mr. Endurance, Mr. Umar, Sir T.K, Sabo, and to my school father Mr Sunday Husseini, and lastly Daniel Jenom.

I also want to use the medium to appreciate and express my gratitude to my supervisor Dr. W. B. Kareem, not just a supervisor but have been like a father to me for his continuous advice and guide throughout my years in the university and for his appreciate corrections towards the success of my project, may God bless you sir. Also, my lecturer: Mrs. N. Franca, Dr Abdulkabir Mohammed, D Kareem Wahab, Dr Mohammed Bala, Dr. Ibrahim Dauda, Dr. Saba Moses. Hon. (Dr) G. A. Usman and Dr. Hassan Abdulahi for their support and encouragement throughout my stay in school. I appreciate my Head of Department Dr. Yakubu Umar and to my lecturers whom God used to educate and enlighten me may god bless you all. I will not fail to acknowledge and appreciate my wood work technologist Mallam Haruna may God bless you sir.

ABSTRACT

This study examined the entrepreneurial and occupational skills needed for self-employment by woodwork graduates of Futminna. Three research questions were developed to guide the study and three null hypotheses were tested at 0.05 level of significance. It employed a survey research design. The study used a four-point scale questionnaire, which contains a total of 24-items, as instrument. In all, 6 woodwork lecturers and 44 woodwork students made up the sample for the study, giving rise to a total sample size of 50. The result showed Lack of adequate practically skilled teaching personnel, Ability to set the depth of cut correctly with the adjustment lever on jointer. The study recommended among other things, government should Endeavour to make learning very easy and attractive to students. This can be done by providing textbooks and learning materials to technical college students and means of transport should also be provided where necessary. If possible, hostel should be provided for student's comfort, Awareness campaign by the government is very relevant to gearing up the parents/students towards realizing the prospects in the woodwork trade. This would help remove elements of bias by parents as regards the institution their children would be sent to i.e., university and NOT technical college as they used to prefer. The campaign should be done in such a way that parents/students would be exposed to some achievements of the past and present woodwork industrialist.

TABLE OF CONTENTS

	Pages
Cover Page	i
Title Page	ii
Certification	iii
Approval Page	iv
Dedication	v
Acknowledgement	vi
Abstracts	v
	i
	i
Table of Contents	v
	i
	i
	i
List of Tables	i
	x

CHAPTER ONE: INTRODUCTION

Background of Study	1
Statement of the Problem	5
Purpose of the Study	6
Significance of the Study	7
Scope of the Study	8
Research Questions	9
Hypotheses	9

CHAPTER TWO: LITERATURE REVIEW

2.2. Conceptual Framework	10
2.2.1 Skill Acquisition	11
2.1.2 Concept of self-employment	15
2.1.3 Woodwork Technology	17
2.1.4 Concept of Entrepreneurship	19
2.1.5 Operational skills	25
2.1.6 Modern Woodwork Technology Tools and Equipment	34

2.1.0	Theoretical Framework	
		35
2.1.1	Theory of Skill Development	
		35
2.3	Review of Related Empirical Studies	
		36
2.4	Summary of Review of Related Literature	
		40

CHAPTER THREE: RESEARCH METHODOLOGY

3.1	Research Design	41
3.2	Area of Study	41
3.3	Population of the Study	41
3.4	Sample and Sampling Technique	
		41
3.5	Instruments for Data Collection	42
3.6	Validation of Instrument	42
3.7	Administration of Instrument	42
3.8	Method of Data Analysis	43
3.9	Decision Rule	43

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1	Research Question 1	44
4.2	Research Question 2	45
4.3	Research Question 3	46

4.4 Hypotheses I	47
4.5 Hypotheses II	48
4.6 Hypotheses III	49
4.7 Findings of the Study	49
4.8 Discussion of Findings	51

CHAPTER FIVE: CONCLUSION AND RECOMMEDATIONS

5.0 Summary of the Study	54
5.1 Implications of the Study	55
5.2 conclusion	55
5.3 Recommendations	56
5.4 Suggestions for Further Research	56
References	57
Appendices	61

Tables

Pages

LIST OF TABLES

4.1	Mean Response of woodwork lecturers and woodwork students on the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment.	44
4.2	Mean Response of woodwork lecturers and woodwork students on the occupational skills needed by woodwork graduate of Futminna for self-employment	45
4.3	Mean Response of woodwork lecturers and woodwork students on the constraints militating against the acquisition of skill by woodwork graduate of Futminna.	46
4.4	T-test on the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment	47
4.5	T-test on the occupational skills needed by woodwork graduate of Futminna for self-employment	48
4.6	T-test on the constraints militating against the acquisition of skill by woodwork graduate of Futminna	49

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

A strong knowledge of modern technology provides a good foundation for any developing country such as Nigeria. It equips an individual with knowledge and skills for designing, entrepreneurial and operational techniques that will enable them to make maximum use of their natural resources for the benefit of the society and improving individual living. Institutions such as federal university of technology Minna offered courses such Industrial and Technology Education in order to equip graduates with relevant skills needed to be self-employed and provide job opportunities for other people in the society.

According to Odewole (2018) Technology Education aim to train students in the application of science and technological knowledge to the solution of practical problems facing society, Odewole (2018) furthermore note that the programme is not merely to train graduate in in theoretical aspect alone but to also train graduates in practical aspect too. In addition, technical education within the content of craftsmanship is seen by many as education for self-reliance, which leads to national development Odewole (2018). It is the education which provides the persons that has received it with self-employment thereby contributing to the society in which he/she lives It is for this reason that authors like Toby (1997), Sofolahan 1989 in Miller (2011) attributed under-development to low level of technology which marks the sociocultural difference between developed and developing worlds. Technical/technology education is a major component of vocational education The Nigeria Educational Research and Development Council NERDC (2012) stated that vocational education is that form of education which is obtainable at the technical colleges This is equivalent to senior secondary education but designed to Prepare individual to acquire practical skill, basic and scientific knowledge and attitude required as craftsmen and technicians and sub-professional level.

Industrial and Technology education programme provides options in the course of study which are:

1. Automobile Technology
2. Building Technology
3. Electrical/Electronic Technology
4. Metalwork Technology
5. Woodwork Technology

According to the student handbook of industrial and technology education the following are the objective of the programme:

1. Equip graduates with appropriate techniques for solving problems affecting Technology Education and Technological innovations.
2. Provide specialized training for technical teachers, curriculum developer and supervisors of Technology Education at all school levels.
3. Equip graduates with creative teaching strategies at the elementary, secondary and tertiary levels of education.
4. Equip graduates with designs and research skills.

Technology Education helps to equip graduates with relevance skills in areas such as woodwork.

Woodwork is defined by the Advanced Learner's English Dictionary as act of making things out of wood. Woodwork therefore includes door frames, window casements, staircase, etc. Olaitan (2004) defined woodwork as any activity involved in the making or shaping of object out of timber/wood. Originally, the term referred only to making interior fitting out of wood such as molding and skills ways. It is generally used to include carpentry, joinery, cabinet and furniture manufacturing.

Woodwork is a branch in vocational subject that deals with activities or skills of making things from wood. Woodwork technology is one of the programmes offered in institutions technical colleges in Nigeria. Wagner and Kicklighter (1986) stated that woodwork technology requires technical skills from students for good operational performance in woodwork trades such as; frame construction, carcass construction, stool construction and skills in the use of tools and equipment to effectively conduct in woodwork practical project. Hence graduates in woodwork technology need to acquire appropriate entrepreneurial and operational skills in order to be self-employed.

Skill in the view of Robinson (2000) is a standardized requirement for an individual to properly perform a specific job. Krevisky and Jordan (1994) viewed skills as ability to possess suitable and sufficient skills, knowledge and experience for carrying out a particular task. Olaitan (2003) added that skill is the knowledge, attitude and judgement which one required in order to perform successfully at a specified proficiency in any given work. Usioboh (2007) described skill as ability to do something well measured against a standard especially ability acquired through experience or training. To be skilled means having enough knowledge and attitude to do something to a satisfactory standard. In the context of this study, skill is the capacity of woodwork graduates to be to effectively utilize their abilities in order to create a business (self-employment) of their own with both entrepreneurial and operational skills acquired.

Umar (2014) defines self-employment as the ability to engage oneself in an occupation or engage oneself independently of an employment. Self-employment is a way to achieve employment goal not a goal in itself but all individual participating in vocational service are expected to establish an employment that is consistent with their strength, resources, priorities, capability, career, interest, and inform choice. In order for woodwork graduates to

be self-employed, graduates from woodwork must possess entrepreneurial skills which will enable them to be self-employed.

Entrepreneurial skill acquisition, can be regarded as frontier that facilitates the actualization of self-employment. This amongst other things constitutes the push of the Nigerian Government over time in reduce the menace of unemployment. In order to promote self-dependence and minimize the high rate of unemployment among the youth populace. According to Omeje (2013), “entrepreneurial skills acquisition can be obtained through various avenues such as seminars, workshops, attending entrepreneurial training classes, development programmes, universities, job rotation, special (intensive) training, article ship or apprenticeship, organizational learning, research and development Institutions, consultants, national and international agencies and bodies, non-governmental organizations (NGOs) and professional bodies.” This entails that, upon the acquisition of these requisite training by the teeming Nigerian youth populace from various sources, it will serve as a propeller for actualizing the government’s aim of reducing unemployment. In order to acquire adequate entrepreneurial skill woodwork graduates must also have good communication skill, self-management skills, problem solving skill, critical thinking skill, risk taking skill etc. as an entrepreneurial skill. For woodwork graduates to be fully self-employed it is not enough to only possess entrepreneurial skills alone there must also be adequate operational skills by woodwork graduate.

Operational skills are also refers to as practical skills. Occupational skills are the skills required by woodwork graduates in order to carry out a task or a job effectively. Operational skill is an essential skill which every woodwork graduates must possess in other to best fits in the society and also be able to create job opportunity for other people in the societies. Operational skills in woodwork refers to skills in carpentry, joinery, cabinet, furniture

manufacturing, frame construction, carcass construction, stool construction and skills in the use of tools and equipment to effectively conduct in woodwork practical project. There are number of factors influencing the increase in the number of unemployed graduates from institution and technical colleges. According to Okoro (1993) one of such is the inadequate preparation of students for projects in schools and colleges for effective performance. Hence, industries reject many applicants due to lack of appropriate occupational skills, and many lack both entrepreneurial skills and occupational skills which had led to increase in unemployment meanwhile technology education programme aimed at equipping graduates with relevant skills needed to be self-reliance. It is on this note there is need to identify the entrepreneurial and occupational skills needed for self-employment by woodwork graduates of Futminna.

1.2 Statement of the Problem

Technical education programme produces craftsmen who constitute the lower level manpower needed in the country. Woodwork is as old as man. The quality and aesthetic nature of olden and modern woodwork projects depend on the highly skilled manpower for maximum productivity. Technical Education as the stepping stone for development of technological skills, play an important role for equipping woodwork students with skills to be self-reliant in their discipline as well as proceed for further education to become more competent personnel to work with woodwork industries or teachers for the conventional secondary schools and Technical Colleges (FRN, 2014).

A woodwork graduate of Technical Education should be capable of independent work, but it is observed by Umar (2014), that most of the wooden articles executed by these graduates are not poorly performed. This could be lack of skills required in accomplishing given tasks in the use of tools and equipment for the manufacture and repair of wooden structures.

However, most of the technical school and institutions graduates lack some of the skills required to enable them practice their trade effectively. However, most graduates of technical education in Nigeria are not readily employed by industries due to lack of appropriate skills for conducting practical tasks. Hence, most of woodwork technology graduates of technical education graduate from school to unemployment. This issue of unemployment in Nigeria has been the major problem which is causing greatest set-back and seriously affects the economic development of Nigeria. In order to train students properly in woodwork skills for effective participation in the world of work, there is need for effects skills. In an attempt to fill this gap, it is imperative to carry out a study on the entrepreneurial and occupational skills needed for self-employment by woodwork graduates of Futminna.

1.3 Purpose of the Study

The main purpose of this study is to determine the entrepreneurial and occupational skills needed for self-employment by woodwork graduates of Futminna. Specifically, the study will identify:

1. The entrepreneurial skills needed by woodwork graduates of Futminna for self-employment.
2. The occupational skills needed by woodwork graduate of Futminna for self-employment.
3. The constraints militating against the acquisition of skill by woodwork graduate of Futminna.

1.4 Significance of the Study

The findings of the study would benefit woodwork technology lecturers and graduates, woodwork technology students, Ministry of Education, curriculum planners, parents and guidance, woodwork technology industries as well as people and government.

The findings of the study will provide information for woodwork technology lecturers and teacher to improve their teaching to solve the current problem inherent in students' poor performance in woodwork technology and ways of improving woodwork technology students' performance. On the other hand, the woodwork technology graduates would benefit from the findings. They will be able to overcome some of the difficulties encountered in producing woodwork practical tasks. The students would as well acquire and develop the appropriate skill that would make them self-reliant, enterprising and improve their employability.

The Ministry of Education through science and technical schools' board would be more committed as a result of this study to the financing of technical colleges regarding the training of woodwork teachers to upgrade their skills. The Ministry would through the knowledge of the study supply qualified and competent teachers, and also provide adequate facilities for the execution of practical projects.

The result of the study will also provide information to curriculum planner on aspects of curriculum in woodwork practical task that require improvement. Hence information will be integrated by the curriculum planners for the purpose of improving the skills of graduates in woodwork practical tasks by updating the requirements of the woodwork technology curriculum for practical tasks.

Moreover, parents and guidance will benefit from the findings of the study because when their children and wards are empowered with improved operational skills, they may be employed or establish their own enterprises and thereby take the responsibilities of some member of the family financially and otherwise.

In addition, the result of the study will be of immense benefit to industries by obtaining the skilled personnel that will facilitate the production of the industries in terms of woodwork operational task. This would increase the productivity and marketability of industries and their products.

Finally, society and government will equally benefit from the findings of this study by obtaining the desired skilled and professionally qualified woodwork technology graduates. This knowledge of the finds and their integration in the curriculum would eventually reduce the rate of unemployment in the society at large by increasing the living standard of the society. An understanding of the findings would also assist government in policy making and implementation about woodwork technology in the states.

1.5 Scope of the Study

The study will be carried out to determine the entrepreneurial and occupational skills need for self-employment by woodwork graduates of Futminna. The study specifically will cover the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment, the occupational skills needed by woodwork graduate of Futminna for self-employment, the constraints militating against the acquisition of skill by woodwork graduate of Futminna.

The woodwork lecturers and the woodwork students in the study constitute the respondents from which data for the study will be collect. This is because, it is the candid believe of the researcher that these two groups of respondents are suitable for providing the require data for

the study. Adequacy of workshop or laboratory equipment will not be covered, as it does not form part of entrepreneurial and operational skills needed.

1.6 Research Questions

Below are the research questions guiding the study:

1. What are the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment?
2. What are the occupational skills needed by woodwork graduate of Futminna for self-employment?
3. What are the constraints militating against the acquisition of entrepreneurial and occupational skill by woodwork graduate of Futminna?

1.7 Hypotheses

The following null hypotheses that will be tested at 0.05 level of significance:

H₀₁: There is no significant difference in the mean responses of woodwork lecturers and woodwork students on the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment.

H₀₂: There is no significant difference in the mean responses of woodwork lecturers and woodwork students on the occupational skills needed by woodwork graduate of Futminna for self-employment.

H₀₃: There is no significant difference in the mean responses of woodwork lecturers and woodwork students on the constraints militating against the acquisition of skill by woodwork graduate of Futminna.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The related literature was reviewed under the following subheadings

2.1. Skill Acquisition

2.2 Concept of self-employment

2.3 Woodwork Technology

2.4 Concept of Entrepreneurship

2.5 Operational skills

2.6 Modern Woodwork Technology Tools and Equipment

2.2 Theoretical framework

2.1 Theory of Skill Development

2.3 Review of related empirical studies

2.4 Summary of Reviewed Literature

2.1.1 Skill Acquisition

People working in the specialized fields required technical and knowledge in order to meet the requirements of continually changing environment of the various woodwork industries.

The basic skills are needed to function effectively in the world of work. Technical competence or skills refers to both the theoretical knowledge and operational skills required by the students in the course of their education and training in the technical colleges. It also

means to acquaint the graduates with all the basic knowledge and practices which they need to be able to function effectively in the world of work (Ozioko, 2007).

Technical competence is also referred to, as the technical skills or industry based skills embedded in the school curriculum (Ominabo, 2005). According to Osuala (1998), technical skills refer to the ability to do or perform an activity in relation to some meaningful work. He further stressed that it presents challenges to the learner by integrating operational work, theoretical knowledge, common sense, observation ability and encouragement in an occupation. Okorie (2000) asserted that technical skill involve application of mental and physical activities. He also described it as ability to handle objects in a skilful manner. According to him it also enables an individual to develop physical, social, intellectual, economic and emotional capabilities. Okorie further pointed out that an individual who wants to acquire technical skills must possess qualities such as interest, ability, aptitude, practice, personality characteristics and physical qualities.

The acquisition of psychomotor skills is central in vocational technical education. Teachers of technology are therefore expected not only to possess relevant production skills but are also required to know the process of developing psychomotor skills and to focus on them when they teach their own students. This will enable the teachers to set up appropriate training techniques that will guide them in teaching students most effectively and efficiently.

An understanding of the process by which psychomotor skills are acquired is a basic condition for effective vocational education training. This process has variously been described by several scientists (Gofwen, 2007). The studies of these authors in the theories of skills acquisition have culminated into what has been known today as the six levels of steps of psychomotor skills acquisition, namely: perceiving, motivating, performing, adapting and innovation.

Perceiving with respect to teaching psychomotor skills, in vocational education, Hammond and Lamar (1988) stressed that the teacher should develop in students a strong desire to possess the manipulative ability. He should be genuinely interested in their skillful performance. It may be desirable or even necessary to have the students see a product that has been produced by a skilled person or in some cases, see the skill performance while it is in progress. This may not only motivate the students, it could develop in them an ideal. The student must know why the skill is needed if they want to possess it and they must feel the need for that ability. Merely telling them (as it is often done in theory lessons) that one ought to know how to do this will not supply a vigorous motive. The authors then concluded that the teacher should see that the students have a clear and correct picture (or perception) of what is to be achieved for motivation; otherwise not much improvement can be achieved.

Motivation in describing psychomotor skills acquisition, Sentile (1972 as cited in Gofwen, 2007) indicated that setting goals and / or solving problem must be the first step in creating motivation in the learner or trainee. Motivation involves satisfaction, needs, rewards, and/or punishment. Initial arousal of an intention seems to be prerequisite which operates as a trigger for further action. There are indications that engaging in an activity and practicing are meaningful only when the learner shows an appropriate indication of motivation. To this, Padelford (1984) states that motivation or incentive seems to be the activator and sustainer of action or thought when acquiring a psychomotor skill. Goals are an essential part of the process of acquiring psychomotor skills. They may be externally directed by another person or internally directed or both. It looks like many psychomotor skills are attained because the learner wants to, or because it feels good to the learner. It was pointed out that various kind of external stimulation and positive internal feedback make possible a high level of achievement in psychomotor skills. In teaching and learning process both internal and external sources of

motivation should be employed. Without effective motivation or incentive which may lead to imitation, psychomotor skills would not be acquired or may be poorly attained at best.

Imitation is the stage where the learner is involved in mental manipulation of the form, pattern, or sequence and or mimicking a series of patterns or procedures. In psychomotor skill acquisition, therefore, the learner receives the necessary cues, mentally manipulates the cues and organizes them into a series of set before attempting to perform a function.

As a operational ways of assisting students to imitate Gall (1981) advised that the teacher should ask the students to name the important steps in doing what they are now ready to learn to do. Furthermore, the teacher should demonstrate the procedure, if it is difficult for the students to understand. Usually in learning from a demonstration, the students watch being done, and then try their hands, at doing what was demonstrated. The teacher should show and explain how to perform each operation step by step. The students should be made to go through the process each trying his hand at it. Performing operation is necessary to acquiring the skill; knowledge and imitation alone cannot develop a manipulative skill.

Performing, by same authors point to the fact that practice is necessary pre-requisite for learning a task and learning process with an increase in the amount of practice. Students in vocational technical education need to be given enough opportunities to practice what they are being though in theory lessons. Usually, the students will need to develop considerable skill before using operation on a large scale or on a valuable piece of work. To develop this degree of skill, repeated practice exercise may be used which involves various operations and standard of workmanship, Olaitan, (1999) stated that work experience will be effective in proportion to the specific experience for training habits of doing and thinking through repetitive performance. When such is done students may be able to adopt well.

Adaptation is the ability to perform expertly to the ultimate goal of most psychomotor skill training but ideally it should go beyond that. Padelford (1984) recommended that certain psychomotor skill should be adapted to new situations (a sort of transfer of learning). Adapting according to Padelford, involves diagnosing and problem solving and the added dimension of creativity. Automatic action may be easier to evaluate, but vocational technical teachers should equally emphasize adaptive learning. This stem from the fact that transfer of learning is often required in problem solving situation which is a typical characteristic of the productive or service world. Adoption may bring about innovation.

Innovation is the highest level of psychomotor skill acquisition, which emphasizes the ability to experiment and create new forms of the learned skill. Singer (1981) stressed that the opportunity to express feelings and to gain a feeling of self-actualization are inherent in the innovative act. Innovation presents a challenge and an opportunity for fulfillment and positive self-concept. Expressing and symbolizing need not be restricted to the other fields of Endeavour but equally applicable to the fields of industry. Indeed, in the words of Padelford (1984) “that uniqueness and variation from standard forms characterize creative activity.

Innovation requires all the domains of learning and creativity, and much feedback. The need to provide adequate exposure to students who are enrolled in vocational technical programmed in operational skill areas while in school has variously been emphasized by vocational and technical educators. Olaitan,(1999) for instance observed that vocational technical education is education for work, hence technical teachers should expose trainees to learning in job related models and in an environment that depicts real work situations.

Ndinechi (1994) stressed the need to strengthen the links between learning in school and the practice of work with the aim of facilitating the transition from school to employment. Ali, in Olaitan, (1999), remarked that while many subjects may be more theoretical than operational,

vocational technical education is more operational than theoretical, hence every effort must be made to expose learners to operational situations where skills and knowledge could be learned concurrently. Indeed, it may be said that any instructional arrangement that is initiated to facilitate the process of skills acquisition in vocational technical institution is a commendable innovation and a giant step in the right direction. The only way to learn operational skill is by doing. Since the ultimate goal of vocational technical education is preparing on individual for work, any learning situation that promotes the accumulation of theoretical knowledge only at the expense of operational interaction with the objects and equipment is not only operating contrary to the principles of vocational technical education but runs the risk of operating an irrelevant curriculum (Gowon, 2004).

2.1.2 Concept of self-employment

Mc-Cathy, (2007) defines self-employment as the ability to engage oneself in an occupation or engage oneself independently of an employment. Self-employment is a way to achieve employment goal not a goal in itself but all individual participating in vocational service are expected to establish an employment that is consistent with their strength, resources, priorities, capability, career, interest, and inform choice. Once an employment goal is established self-employment can be one's option within the labour market to achieve goal. If an individual demonstrates the skills necessary to develop and run business, self-employment may be viable.

Annoe (2006) , specific vocational skill leading to self-employment skill focus on helping individual apprehension, computation, and culture. Again individual and personal reliability skills in the area of personal management, ethics and vocational maturity, economic adaptability, skills leading to problem solving, learning ability and various development will be acquired and effective skills leading to inter personal skill organization,

negotiating skills, creativity and leadership are all needed to achieve long term and sustainable self-employment.

According to main characteristics of self-employment subject emphasized by authors, self-employment can be defined as a simplified form of entrepreneurship, where a person, by combining financial resources and personal capacity offer market (consumes) goods services in order to obtain financial and (or) non-financial benefits and assuming the risk of self-employment. Although several researchers (Bradley, Robert, 2004; Stel, Carrey, Thurik, 2005) argued that self-employment cannot be identified as entrepreneurship, because they simply cannot reflect the actual level of entrepreneurship in the country, and not all self-employed persons can be considered as entrepreneurs , however, the entrenched attitude in society about the links between these phenomena allows them to be synonymous. So it was concluded that there is no scientific consensus on the concept of self-employment and self-employment subject is still the subject of debate.

2.1.3 Woodwork Technology

Woodworking is the skill or activity of making wooden objects. It is also referred to as the parts of a house or room that are made up of wood. The programme in woodwork technology will give an individual best possible knowledge related to wooden materials and industrial production of wood items meeting up with the needs and expectations from the wood based industry.

Combining the skills acquired with eth specific knowledge in wood and wood technology, make the learner to become and attractive competence at the labour market. Woodwork technology programme has a pronounced project-oriented profile in technical colleges. The teachers of woodwork technology trade in technical colleges have the train the woodwork students in both the theoretical studies as well as the more practical projects work.

This is due to the ever increasing need for more advanced technology used by the industries to be competitive (Portal, 2007).

According to Pam (2004), woodwork technology as part of vocational technical education is that types of training intended to prepare the students to earn a living in an occupation in which success is dependent largely on understanding of technology as applied to modern technology and design. This type of education provides skill, knowledge and attitudes necessary for effective employment in specific occupation (Okoro, 1993).

Woodwork technology in technical colleges therefore, involves the engagement of both woodwork teachers and students in theory and practical activities. In this respect, students will become familiar with main aspects involved in the design and development of new and existing woodwork production based on customer need, technology and processes. Teacher of woodwork technology in technical colleges should have the knowledge of a wide range of production machinery currently used in the advanced woodworking industry and modern woodwork technology hand tools.

Sackey (1999) viewed woodwork technology in technical colleges as a written course aimed to meet the need of a range of syllabus lacking emphasis on practical procedure added that woodwork technology is a versatile and career avenue. Students start to learn when they are involved in the learning situation. At present we have woodwork technology teachers who emphasize more on theoretical aspects in the woodworkshops with no emphasis on practical work due to lack of improved skills in practical projects. This indicates that if woodwork technology course is well taught especially in terms of practical projects in technical colleges, many of the students graduating from the technical colleges will engage in woodwork related business or open their own woodwork shops instead of waiting for government work.

Sara (2001) discovered that more than 60 per cent of the staff teaching woodwork technology in technical colleges could not perform the skills or provide technical services they were

expected to teach other despite their high level paper qualification. This is of course due to lack of improved skills or non-skill acquisition from their respective institutions. Therefore, the development of woodwork technology in Nigeria technical colleges cannot be achieved without adequate, qualified and skilled woodwork teachers, modern tools and equipment as well as well facilities to enable our country achieve economic and technological advancement. But with prevailing problems of woodwork technology, its dependence as base for the nations progress cannot be reality in woodwork technology except quick steps are taken forestall it.

Olumese (2004) pointed out that teaching is a process of facilitating learning. Therefore, for effective teaching of woodwork technology to take place, it is considered quite appropriate that prospective teachers should interact with the prevailing teaching environment. This is due to the fact that the importance of teaching woodwork in our technical colleges cannot be over emphasized, considering the unemployment rate in the country and the job opportunities offered by the woodwork technology trade. This indicates that woodwork technology in Nigerian technical colleges can also provide a better basis for educational and skills development for both the teachers and students respectively.

2.1.4 Concept of Entrepreneurship

According to Caree and Thurik (2002) an entrepreneur is an enterprising individual who builds capital through risk and /or initiative. Entrepreneur in English dictionary is a term applied to a person who is willing to help, launch a new venture or enterprise and accept full responsibility for the outcome. Over the time, scholars have defined the term in different ways. Here are some of their definitions. An entrepreneur is a person who pays a certain price for a product to resell it at an uncertain price, thereby making decisions about obtaining and using the resources while consequently admitting the risk of enterprise. An entrepreneur is an economic agent who unites all means of production- land of one, the labour of another and

the capital of yet another and thus produces a product. By selling the product in the market he pays rent or land, wages to labour, interest on capital and what remains is his profit, he shift economic resources out of an area of lower and into an area of higher productivity and greater yield. The later definition is most appropriate when viewed from the perspective of economic development. Entrepreneurship is the practice of starting new organizations or revitalizing nature organizations, particularly new business generally in response to identified opportunities. An entrepreneur according to Butler (2012) is someone who creates a new organization by generating resources to take an idea to market by utilizing the entrepreneurial process. This involves an understanding of legal, fund raising and financial issues, marketing running the enterprise. Entrepreneurship is the act of identifying, initiating, organizing and bringing a vision to life, be it a new product, service, process, organizational strategy, promotional strategy or a niche market (Akinwumi, 2012).

Entrepreneurship creative force has spread across markets and industries, simultaneously creating new products and business models. Many “high value” entrepreneurial ventures seek venture capital in order to raise capital to build the business (Ugwuda, 2014). An entrepreneur with basic technical education skills can manage him/herself or set up his own business and become self-employed and be able to employ other (FRN, 2004). The entrepreneur can establish a viable business enterprise and manage his entrepreneurial work efficiently as technical and vocational educator. This similarity of career goals of Entrepreneurial, technical and vocational education had a meeting point statement of individual acquiring necessary skill to be self-reliant in a chosen field in the National Policy on Education (FRN, 2004):

The trained manpower will be equipped with scientific, technological and business knowledge particularly at craft, advanced craft and at technical levels.

Technical knowledge and vocational skills necessary for agricultural, commercial and economic development.

Training and impart the necessary skill to individual who shall be self-reliant economically

The goals stated are all technical education skills required by an entrepreneur for survival as a business owner. Nonetheless, the importance of the subject in the world of business is such that most successful entrepreneurs are mostly technical educators by training. Entrepreneurs with a sound knowledge of technical education often perform better than their counterparts who are not proficient in the subject (Ugwuda, 2014). Being able to acquire scientific knowledge, technological skills, business knowledge, technical knowledge, vocational skill necessary for agricultural products, commercial and economic emancipation and development in all ramifications, there is a strong belief the technical educator can perform the role of entrepreneur. The key to successful entrepreneurial business is skill acquisition in technical education. It is high time in a country without white collar jobs and government employment to embrace technical education for self-reliant.

An entrepreneur can be defined as an innovating individual who has developed an ongoing business activity where none existed before (Arogundade, 2011). Meredith (1983) defined an entrepreneur as a person or persons who possesses the ability to recognize and evaluate business opportunities, assemble the necessary sources to take advantage of them and take appropriate action to ensure success. Acs and Varga (2005) explained entrepreneurs as individual who constantly discover new markets and try to figure out how to supply those markets efficiently and make a profit. He is a person that searches for change, responds to change, and exploits change by converting change into business opportunity. An entrepreneur is someone who specializes in making judgemental decisions about the coordination of scarce resources (Casson, 2003). This means that the entrepreneur is an individual who can make

effective decision on how his business venture can succeed. Also the term judgemental implies that the decision cannot be simply a routine application of a standard rule because the perception of opportunities is subjective, while opportunities are objective (Acs, 2006). Ugwoke, Onomereroro and Abidde (2004) explained entrepreneur as a word that originated from the French word *entreprendre* which means to undertake. An entrepreneur is one who undertakes to organize, manage and assume the risks of business. Entrepreneurship therefore, can be defined as the process of using private initiative to transform a business concept into a new venture or to grow and diversify an existing venture or enterprise with high growth potential. Akonbowa (2005) opined that entrepreneurship is the creation of new organization and that it is the process creating new ideas through devotion of time and efforts. Considering the definitions above, for one to qualify as entrepreneur he must be an originator of profitable business idea.

The Need for Entrepreneurial Skill Development in Woodwork

Despite the inclusion of entrepreneurship education in the curricular of tertiary institutions in Nigeria, the achievement of the goals and objectives of technical and vocational education in terms of seeking to relate education to employment, job creation and self-reliance has remained illusive. According to Obi (2010) the potential rudimental competences of entrepreneurship are presently lacking in vocational training and education. The entrepreneurial spirit/skills and attitude development in such trades like Woodwork are lacking in the entrepreneurship education as presently mounted in tertiary institutions.

Woodworking is the act, art or trade of working with wood. It is the process of building, making or carving something using wood. Woodwork is a profitable business among a few woodworkers in Nigeria, who are still in the trade despite societal poor image that is ascribed to the trade. This societal poor image on woodwork as a trade, no doubt, could be responsible

for low self-esteem usually suffered by the practitioners of the trade, and which may have resulted in the societal view of the trade as unattractive. There are many reasons for which people discontinue with their chosen career or area of studies. Amongst these are: lack of financial means, parental unemployment; lack of communication at home; low self-esteem; and lack of future perspective. The best way to reverse this trend is to bring out the entrepreneurial side of the person.

Woodwork is one of the major trade components of the curriculum of Technical and vocational Education. To a layman, Woodwork is derogatorily referred to as cut-and-join-technology, but Woodwork is much more than that. Like every other practical oriented disciplines, Woodwork require skills and business opportunities abound in the trades. It emphasizes learning by doing through cognitive and psychomotor skill.

Skill is the ability to do something well, usually gained through training or experience. Okorie (2000) defined skill as ease, rapidity, precision usually of muscular action. He further referred to skill as expertness, practiced ability, dexterity, and tact. To possess a skill is to demonstrate the habit of acting, thinking and behaving in a specific activity in such a way that the process becomes natural to the individual through repetition or practice. The major areas of Woodwork where entrepreneurial skill development is required include: furniture making; Carpentry and Joinery; upholstery; Machine Woodworking and Ornamental Woodwork (Woodcarving). Developing entrepreneurial skill in Woodwork is a sure way of curbing youth unemployment and reducing poverty.

According to Obi (2010) the ugly picture painted by mass unemployment in Nigeria demands deliberate and goal oriented approach to entrepreneurship education as different from the one presently established in tertiary institutions which is lopsided, lacks practical content, and therefore impotent. It is lopsided because according to him it is only taught in the classroom

which is devoid of real world of work experiences. He therefore suggested a model of entrepreneurial skill development among Nigerian youths in tertiary institution whereby the various departments should run consultancy outfits or service-oriented workshops, where students in their departments will acquire, develop and build the desirable job skills before graduation.

Ogalanya in Anyaeneh (2010) classified the entrepreneurial skills required for self-employment into three broad areas namely; sound professional intellectual skills, job specific/technical skills and psycho-social skills each of which require training and can be broken down as follows:

Sound Professional/ Intellectual Skills- the skill development in this instance will focus on: managerial/ administrative skills-managing people and materials; planning/Conceptual skill-articulating ideas in a logical fashion; human relations skill-interpersonal relationship, management-labour relations; supervisory / Coordination skills-persuasiveness and communication (language) skills-power of accurate information dissemination.

Job Specific/Technical Skills-Skill development in this case will focus on: competitive and enterprising skills; creativity/innovative/imaginative skills; investigative/ problem solving skills; skill in the operation of gadgets and personal use competence.

Psycho-social skills-Serious attempt should be made to develop: high Motivation/strong will power/determination to succeed; honesty/Hard work/dedication to duty; self-discipline/self-confidence/acceptance of challenges; respect for the dignity of labour- study of the profits of successful entrepreneurs in the locality and reward system-short term or long term, which will require patience and perseverance.

Steps in developing Entrepreneurial Skill in Woodwork

To educate young entrepreneurs in Woodwork in a successful manner it will be important to carry out the following activities:

- Carefully analyze the needs of the market to which you are directing the services of your enterprise, that is, the needs of young people in your area
- Look into the possibility of forming teams, especially one that would lead the project and its auxiliary or operative teams, some that coordinate and supervise, others that implement. To do this, it is necessary to determine beforehand a clear purpose for each team and distribute functions and roles accordingly.
- Conduct a detailed survey at the community level to establish what qualities they would like their children to develop at school. Gaining an impression of what success means to the community may help improve the relevancy of your education programme.
- Gather the greatest possible amount of information about what an entrepreneur Means to different community members. Focus groups, extended interviews and questionnaires can be a useful way of finding this out.
- It is important that local educational authorities are very familiar with the student/trainee entrepreneur project that is being carried out. Excellent communication with these authorities will help ensure that progress is not slowed down at a later date. It may be worthwhile presenting them with the action plan, and to give them an opportunity to offer input. Make a calendar of activities for tasks over the coming 12 months.

2.1.5 Operational skills

The term Operational skill is defined by Padel Ford (1983) as the level of proficiency on a specific task or limited group of task. It is also referred to as the manipulative skills that involve parts of the body. These definitions emphasized physical performances which are the performances that involve either the movement of the body or used of tools or objects to assist performance as the case in operating a machine. On the other hand, Ezewu (1984) defined Operational skill as the term applied to any task that involves the construction of a products. It is a decision chain model consisting of three phases namely; initiation, execution and terminal result. It is also described as a method of instruction that enable students to acquire wholehearted purposes.

Emerging from these definitions, is the fact that woodwork technology Operational skill is a problem solving exercise that involves both process and product. The process component of the woodwork skill involves imitating planning, and executions, while a students to solve a problem and the assessor (woodwork teacher) to observe the students and award marks. Thus the woodwork Operational skill is a problem-oriented assignment given to student that requires the use of knowledge and skills for solving it over a period of time.

Therefore, it is clear that woodwork Operational skill in technical and vocational education are organized and coordinated forms of physical observable skills in the use of tools and equipment to perform task. Woodwork technology has a strong emphasis on the Operational woodworking skills which make the course enjoyable and simulating by preparing students with the essential sills needed for employment in fine woodworking industry or eventually lead on to setting private woodworking business.

Ofsted (2007) remarked that students should increasingly be encouraged to develop their own ideas in the work that reflect their own sense of style with modern machines and hand tools following the appropriate techniques to provide quality Operational skills. To gain more

confidence with their Operational skills according to Ofsted, students will also be taught at all of the associated knowledge required in this area which includes:

- Prepare drawings and cutting list, select, prepare and maintain tools and equipment, produce patterns and jigs, identify and select timbers and safely use woodworking machinery.
- Use all woodwork shop tools to undertake Operational tasks, construct range of joints, use of method to produce shaped and veneered parts, construct and assemble furniture skill.
- Fit a range of drawer and cabinet hardware where necessary, apply moldings and finishes and make necessary adjustment to finish the piece.

All Operational based woodwork exercises take place in fully equipped woodwork shops.

Therefore, students need to be encouraged to work towards the highest possible standard in craftsmanship and design. Operational skill is exploratory and experimental in nature. It combines elements off techniques and standard practice with element of creativity. It allows learners to use variety of tools, equipment and materials as well as allow the learner to engage with modern technological advancement.

This aims are to enable the woodwork technology students to develop:

- Skills in woodworking and Operational techniques.
- Skills in measuring and marking-out timber sections and sheet material.
- Safe working practices in workshop environment.
- Operational creativity and problem solving skills.
- Knowledge of sustainability issues in a Operational woodworking context.

From the above aims, it is indicated that the course provide opportunities to develop and enhance psychomotor skills, Operational creativity, Operational solving skills on appreciation of safe working practices in a woodwork shop environment and knowledge of sustainability

issues in Operational woodworking context. Hence, the activities also provide opportunities to build self-confidence and to enhance generic and transferable skills in numeracy, employability skills, thinking skill, planning and organizing of work task, working independently and in collaboration with others.

Operational skill is therefore a course that enables students gain knowledge in the art and crafts of woodworking, and provide basis and necessary skills for technological growth. The knowledge to be acquired is fundamental and will act as an avenue for continues growth during and after school. In view of the above assertion, SQAS (2011) summarized the aims and objectives of Operational skills of woodwork technology as follows:

- Create ability, mental and Operational skills in the use of hand and machine tools for the construction of items in wood and related materials.
- The ability to plan and follow a sequence of work operations which are necessary to lead to successful completion of skills.
- A good basic knowledge of design and reading of working drawing.
- Functional skills capable of providing a means of livelihood in woodworking.
- Awareness of problems relating to wood and wood industry.

The aims and objectives are to develop student's knowledge, understanding, skills and values related to a range of technologies through the safe interaction with material, tools and processes in the planning, development and construction of quality Operational skills.

Therefore, the Operational experiences will be enhanced throughout the designing, manufacturing, communicating, managing and evaluation of skills. This will make students utilize workshops in order to product skilled and detailed skills.

Operational skill in Frame Construction

Frame construction is defined by George (2009), as the technique of construction in which the wooden parts are based around vertical structural members usually called 'studs', which provide

a stable frame to which exterior and interior wall covering area attached. It is also known as light-frame construction when the frame is covered by a roof made of horizontal ceiling joists and sloping rafters (or pre-fabricated roof trusses). Modern light frame structures usually gain strength from rigid panels (Plywood and other plywood like composites such as oriented strand board 'OSB' used to form all or part of wall section. Wall framing in house construction includes the vertical and horizontal members of exterior walls and interior partitions, both of bearing walls and non-bearing walls. These stick members, referred to as studs, wall plates and lintels (headers) serve as a nailing base. The design principles of all woodwork Operational skill t in frame construction are influenced by the materials, shape, structure, use and appearance. Therefore, when students understand the design principle, the frame construction project will be started with just a simple ability of measuring, cutting and assembly.

Commonly, there are two framing techniques when it comes to wood frame building.

They are balloon framing and platform framing construction. Balloon framing uses studs in terms of building from ground to the ceiling of the top floor in the exterior wall regardless of how many levels of the house or building is made of. Platform construction however, needs each floor as a separate unit so study runs from floor to ceiling of each unit. Balloon framing used to be popular method when long lumber was abundant but as time goes by, platform framing is a better choice because it is easier to build and offer more flexibility. Knowing the difference between the two wood frame construction methods will help students to install or create their own frames as well as construct other ones and even partitions. This implies that simple task tend to develop to more complex ones and in no time the woodwork learners start creating new and modern frame construction.

According to Walton (1981), when designing and making any woodwork articles, the designers and craftsmen are influenced by:

- The purpose for which the article is article is required.
- The technical knowledge required for its construction.

- The materials available.
- The appearance of the completed article.

The design of Operational skill is modified according to the current taste and costumes of the age. Thence, the living conditions, customs, needs, tests and even the mode of dress accepted by a society of nay period, influence design and are reflected in the objects and works produced by the creative skills of the craftsmen of the period. Present day artifacts man-man articles) are influenced by our way of living. Designers and craftsmen today have greater scope of experiment and work with an almost unlimited variety of modern materials, tools, and machines in order to produce articles which function efficiently and are pleasing in appearance.

Operational skill in Construction of Framing Joints

The woodwork technology students have to improve on the joints used in frame-like construction where the wood members are jointed end to edge, with their edges at right angles e.g. paralleled doors, tables, chairs, picture frames etc. The face sides of the wood members are usually flush. Some of the common joints for frame construction are:

- Halving or Half-lap joints – The name is applied to joints where the pieces of timbers, which meet or cross each other, are halved in their thickness so that when assembled, the faces are flush.
- Mitred joints – This ends of the pieces are mitred, butt together and held together by nails, screws or glue. The joints may be strengthened by dowels, chiefly used in picture frames, architraves, frames round soling or plywood-table tops etc.
- Dowelled joints – A form of butt joints strengthened by means of dowels used in chairs and tables for fixing the rails and rungs to the legs.
- Mortise and Tenon joints – The most common and strongest form of framing joints.
- There are many forms of mortise and Tenon joints. Chiefly used in panelled frames for doors, frame carcass of cabinets.

- Bridle joints – These joints are sometimes used in place of mortise and Tenon joints, where a stronger joint than a halving joints is required.

The variations of these joints are occasionally necessary, and may be designed to suit special jobs.

Operational skill in Carcase Construction

Carcase construction is used to describe items with box-like body construction.

Walton (1981) defined carcase as the framing of a structure prior to covering or sheeting with plywood or hardboard (or box-like cabinets) before fitting drawers, doors, shelves etc, and before decorative features are applied. The aim is to develop Operational skills in the use of woodworking tools and the production of a range of basic joints and assemblies commonly used in carcase construction. Learners will also develop their knowledge and understanding of woodwork materials, recycling and sustainability issues as well as an appreciation of safe working Operation in a woodwork shop environment. The student prepare for carcase construction in woodworking tasks by:

- Selecting with guidance, woodworking tools, equipment and materials appropriate for the tasks.
- Confirming that woodworking tools and equipment are in good conditions and safe working order before, during and after use.
- Using correct names and terminologies when referring to woodworking tools, equipment, materials, and processes.

The woodwork technology lecturers are in the best position to train the students in the skills for marking-out, bench work, cramping, butt-joints, corner rebates, housing joints, dowel joints etc. If the skills are appropriately acquired, the woodwork students will be able to (Geoff, 2004):

- Prepare for carcase construction woodworking tasks.

- Construct a range of basic woodworking joints used in carcass construction.
- Assemble a carcass with four or more joints.

Walton (1981) identified three main forms of carcass construction. They are frame carcass (simple frame carcass and frame and paneled), solid end carcass, and solid carcass.

- **Simple Frame Carcass:** Consist of a frame-like skeleton of narrow stiles or posts and rails. The frames when constructed are nailed or screwed and glued together ply or hardboard sheeting is then glued and pinned over the carcass frames. Cross-rails for drawers and shelves are either housed or mortise and tenon in while assembling the frames.
- **Frame and Panelled Carcass:** In this type of construction, the sides or ends of the carcass are frame with ply or hardboards panel grooved in. They are then joined at the top and bottom with gross rails lap dovetail into the ends of the stilas or posts.
- **Solid End Carcass:** The ends may be solid wood, multiply, corestock or particle board, with cross rails lapped dovetail at the top and bottom. Other members being fixed with double stub tenons. The planted top is attached with screws through the top cross rail.
- **Solid Carcass Construction:** Has solid ends and solid top and many also have a solid bottom, shelves and partitions. Solid wood, corestock, multiply or particle board being used. The manufactured are usually pre-veneered with figured woods to take transparent finishes. Joints may be dowelled, rebated butt, mitred, housed, tongued and trenched or dovetailed (common, lapped, double lapped or secret mitred) depending on the materials used. Slot screw drawer runners, shelf-cleats etc. if solid wood is used.

The skills in the constructional methods and techniques of carcass construction are stated in the forms of carcass construction earlier, therefore, the students with support of woodwork

technology teachers are to consider the new designs that are necessary to fulfil the needs of man in our changing living and social conditions

Operational skills in Stool Construction

The term stool construction referred to raise surface of a structure used to sit on, commonly for use by one person. Kumaran (2003) described stool as a chair without a back or arm rests or when raised up is also called a stool. The stool or chair is known for its antiquity and simplicity, although for many centuries it was an article of state and dignity rather than an article of ordinary use. The chest, the bench and the stool are ordinary seats of everyday life. On the other hand, Kumaran added that a stool is essentially a seat with no back or arms intended for one person. As such, it was for many centuries the standard seating arrangement for the majority of people.

Good design with regard to stool construction is influenced by the stool designers which have a greater freedom of expression. The stool designer's work is often only required to satisfy his own needs or those of an individual client, thus he can carefully select the most suitable materials and adapt methods of construction and forms, texture and colour to give personality to his creations.

In order to appreciate and understand the present stage of "modern design", the students craftsmen-designer should delve into the past and study the works of craftsmen of earlier times. He should know how design influenced or was influenced by art, architecture, industries, tools and materials, and the prevailing economic, social, cultural and religious forces. By combining this knowledge of the past with that of our own environment, we can be inspired to constructive thinking and experiment, and thus progress and produce beautiful and Operation articles.

There are two main elements governing the design of stool construction or any other woodwork articles. They are:

- Efficiency: This includes combining all the Operational aspects necessary to produce an article which is functionally sound and skillfully made of suitable materials.
- Appearance: The aesthetic or external visual aspects which are produced by skilful and honest use of shapes, surface texture, colours and decoration.

The fundamentals of design and construction of a stool are not dependent on any style or fashion but are aspects which are flexible and can be applied to any creative activity at any time. They are however, influenced by what people think is beautiful and suitable and in harmony with our constantly changing living conditions and environment.

The strength, durability and stability of the stool construction, depend on the type of material, the sectional size of the materials and wood members and the joinery techniques used relative to the particular uses of the article. The final result depends on the careful consideration of these aspects and the skill of the designer or the woodwork lecturer to integrate their relative value according to the use, beauty, and quality of the article. Each aspect depends on and influences others (Becksvort, 2013).

Stool construction enables the woodwork technology students to develop skills in setting-out and making basic woodwork joints commonly used in stools construction which include: butt, notched, halved, dowelled, bridle or mortise and tenon joints, use and read simple woodwork drawing and diagram. Therefore, woodwork lecturers should improve their operation skills on the construction techniques on the aspects of stools construction.

2.1.6 Modern Woodwork Technology Tools and Equipment

The place of equipment, tools, and materials should not be left-out in pursuance of ways for teaching any technical subject like woodwork technology. Since every occupation has a body of content which is only particular to it. Students should be trained in such a way as to

acquire the habit of doing each job within the occupation in the proper way with proper equipment and tools.

Facilities and materials in technical education are those goods and services that help to facilitate teaching and learning process in educational set-up. These include tools, equipment and materials, workshops, classroom, libraries and other utilities etc., which assist education to function and attain goals of acquiring technical skills used in the world of work (Olaitan, 1996).

McGraw (2013) described tools and equipment as those portable and heavy instrument or devices for performing special operation in vocational technical education especially in teaching and learning situations. He also described tools and equipment as device used in the performance of work. Tool applies broadly to a device that facilitates work. It denotes a small manually operated device. It refers to a device for making materials changes on other objects, as by cutting, shearing, striking, rubbing, grinding, squeezing, measuring or other processes. A hand tool is a small manual instrument traditionally operated by the muscular strength of the use. On the other hand, a machine tool is a power-driven mechanisms used to cut, shape or form materials such as wooden items. Tools are main mean by which human beings control and manipulate their physical environment.

In this case, some tools can substitute for other tools, either as a make-shift solution or as a matter of efficiency, but by design, a tool may share key functional attributes with one or more other tools. A multi-tool is a hand tool that incorporates several tools into a single portable device. To modern woodworkers, these types of tools were revolutionary because they were one tool or one device that could do several different things. With this new revolution of tools, the modern woodworker would not have to carry so many tools with them to the job sites. The problem of having to deal with so many different tools was solve with over taking of multi-use tools (Sam, 2006).

Tools differ significantly, not only in their shape but also in their use and they require a certain amount of study and practice before they can be used with any degree of effectiveness. Many professional woodworkers enjoy collecting tools as much as they enjoy woodworking. However, woodworkers of all types and trades will agree that a small group of tools and machines are essential to a broad range of tasks. These tools basically apply to several types of woodwork including rough construction such as framing construction and finished woodwork items. Hence, for a beginning woodworker, a set of essential woodwork tools opens the world of woodworking operations.

2.2 Theoretical framework

2.2.1 Theory of Skill Development

Theory of skill development was propounded by Cratty, (1973). The theory states that individuals have tendency of developing skills in an occupation as a result of continuous or repetitive practice. It is stated that practical skills are essential skills that could be acquired through repetitive means in all technical occupations or professions. It is on this premise that the major objective of all Technical Colleges' programmed should make provision for practical skills to its graduates for self-reliant. Therefore the teaching of vocational education at technical college level should mostly focus on practical skills so as to enable the students acquire marketable skills. Technical Colleges programmed therefore cannot be said to have accomplished without practical skills manifestation.

It is also stressed that skills acquisition cannot be expressed in word but only through demonstration. Theory of skill development is related to the present study in that graduates of and maintenance work technology need to develop skills for effective performance in their various industries or workplaces. Development of relevant skills makes them fit into various sit or positions in relevant industries. Without skills being develop there will be

unemployment among graduates of general installation and maintenance work engineering craft students.

Skill development is a key factor in the employability of workers and the sustainability of enterprises, it is one of the objectives of skills development system to ensure that the skills acquired match the skills valued in the work place. Skills development systems must also help workers and enterprises adjust to changes and handle new conditions by constantly improving their skills to meet up with the climatic change, globalization, demographic trends, technological innovation and/or financial crisis. This is in line with the theory of technical and vocational skill development (TTVSD) by Stevenson (2005). TTSD states that improvement needs in skill development under lie vocational choice development, employability, mobility and sustainability of socio-economy of energy progressive society. Hence this theory is relevant to this study because technological innovations and advancement in general installation and maintenance works is complex and each subsystem of the modern general equipment, machineries, and tools is indeed a challenge to industries in Nigeria if there is no workforce to man them for high productivity.

2.3 Review of related empirical studies

Omeje (2013) carried out a research on entrepreneurial skill development in woodwork trade: a panacea to the challenges of youth unemployment. The changing economies in many developing countries have forced governments and educators to place a high priority on entrepreneurial skill training and development. The major thrusts of technical and vocational education (TVE) in Nigeria amongst other things are to address issues of self-reliance, job creation, youth unemployment, poverty and international competitiveness in skills development towards current and projected opportunities and challenges. Such issues are crucial particularly to Nigeria and to Africa's dignity and survival in general in the fast-

changing global environment. This paper highlights on the concepts, issues and need for entrepreneurial skill acquisition in woodwork trades in addressing the problems of youth unemployment in Nigeria. The paper also identified some challenges to effective entrepreneurial skill development in TVE. Some recommendations were made, based on the identified challenges. The differences between the study and the present study is that the present study is research based while the study is not research based.

Okworie (2013) conducted a study which identified practical skills possessed by woodwork graduates of Niger state technical colleges in using woodworking machines, hand tools and consumables. Three research questions were answered and two hypotheses tested at 0.05 level of significance. A survey research design was adopted for the study. A structured questionnaire was used to gather data from one hundred and two respondents. Simple random sampling was applied to identify the study sample. Mean rating was used to answer research questions, t- test statistics was used to test the hypotheses. Cronbach Alpha Formula was used to determine reliability coefficient of the instrument. The reliability coefficient of the instrument was found to 0.81. The findings of the study showed that Woodwork graduates of technical colleges in Niger State used all the woodworking machines listed except band saw machine, tenoning machine, mortiser and thicknesser. They used all the hand tools such as hammer, screw driver, hand plane, electric jig saw, scraper, pincer, plier, try square and spanner. It was recommended that State Government should provide modern machines for improving practical skills of woodwork students and Woodwork teachers should teach students how to apply formica on wood surfaces. The similarity between the study and the present study is that they both adopt the same research design and make use of questionnaire for data collection also the same method of data analysis was adopted.

Umunadi (2014) conducted a study on entrepreneurial, technical and vocational skills required for self-reliant and job creation. The relevance and appropriateness of the entrepreneurial, technical and vocational education curricula for preparing individual for the

world of work is not reviewed on a regular basis. Over the years as a result of industrial revolution, new machine, tools were manufactured for production in the company are now outdated. The industries are concerned about inadequate qualification of trained personnel and unemployable graduates that are roaming the street of the nation. Equally, educational institutions are reluctant to revise their curricula. They tend to stick to traditional and theoretical teaching, using outdated materials. Curricula of entrepreneurial, technical and vocational education review commissions are to look at the possibilities of identifying viable skills and initiatives for the acquisition of skills for self-reliant and job creation. The paper pointed out inadequate infrastructure, issues of technology, teaching students theoretically and government interference as challenges that are hindrances to the promotion of skill required for self-reliance and job creation. It also addressed strategies for self-reliance required for skills acquisition with some recommendations suggested that a combined curricula committee should be setup to x-ray the issues of skills among others.

Umar (2014) carried out a research on skills required by woodwork technology teachers for improving practical projects in technical colleges in Kano and Jigawa states in northwestern Nigeria. This study was conducted using descriptive survey research to determine the skills required by woodwork technology teachers for improving practical projects in technical colleges in Kano and Jigawa States in North-western Nigeria. Four research questions were developed and answered in line with the purpose of the study. Four null hypotheses were formulated and tested at the probability of 0.05 level of significance. A structural questionnaire was developed from the related literature reviewed for the study. The questionnaire was faced validated by three experts. The questionnaire was tested for reliability using test-retest method and the result showed a coefficient of 0.88. Copies of the questionnaire were administered on 112 respondents to obtain data and same were returned. The data were analysed using the mean and standard deviation to answer the research

questions and t-test statistics to test the null hypotheses. The findings of the study showed that woodwork technology teachers required skills for improving practical project in technical colleges in Kano and Jigawa States. Recommendations made include need for Kano and Jigawa States governments to package the identified competency items in skills required by woodwork technology teachers for improving practical projects in technical colleges into workshop materials and organize workshop on them for the benefit of wood work technology teachers, training and retraining of woodwork technology teachers and provision of instructional resources.

Muhammad (2019) carried out a study on It was influenced by the great concern about the future and continuity of woodwork as a skill oriented course which equip learners with relevant life skills. Three research questions guided the study. Descriptive survey research design was adopted and the population was 36 woodwork teachers. A structured questionnaire consisting of 71 items was developed and used for data collection. Mean and standard deviation were used to answer research question one and two while z-test analysis was used to establish the skills improvement need for research question three. The findings revealed that the teachers need re-training in construction of wooden articles. It was recommended that teachers should regularly be sent on professional courses and engages in commercial activities to update and boost their competencies in skills for teaching activities in schools workshops. The similarity between the study and the present study is that they both adopt the same research design and make use of questionnaire for data collection also the same method of data analysis was adopted.

2.4 Summary of Reviewed Literature

The review of related literatures is discussed under the following sub-headings: Skill Acquisition, Concept of self-employment, Woodwork Technology, Concept of

Entrepreneurship, Operational skills, Modern Woodwork Technology Tools and Equipment. It was deduced from literature that, for any woodwork students to function well in the world today he or she must possess adequate operational and entrepreneur skill. In order to ascertain the skills needed adequate and related literatures was reviewed.

CHAPTER THREE

3.0

METHODOLOGY

3.1 Design of the Study

The study will adopt the descriptive survey research design used to determine the entrepreneurial and occupational skills needed for self-employment by woodwork graduates

of Futminna. Survey design according Nworgu (1991) is aimed at collecting data on and describing in a systematic manner, the characteristics features or facts about a given population. Osuala (2005) said that it is a design which studies the characteristics of people, the vital facts about people and their beliefs, opinions, attitude, motivation and behavior. The design is suitable for the study because it solicit information from woodwork lecturers and woodwork students of futminna.

3.2 Area of the study

The study will be carried out in the department of Industrial and technology Education of Federal University of technology Minna, Niger state. Niger state falls on the land mass area of about 76,363km² and with the population of about 3,950,349 (NPC, 2006) and the study was carried in out Futminna in order to help students get acquainted with relevant skills needed.

3.3 Population for the Study

The population for the study consists of 50 respondents comprising 6 woodwork Lecturers and 44 woodwork students.

3.4 Sample and Sampling Technique

There will not be sampling since the population was small and manageable.

3.5 Instrument for Data Collection

The instrument that will be used in collecting data for the study is structured questionnaire. The questionnaire was made up of four sections (A, B, C, and D). Section 'A' contains items on personal information of the respondents. Section 'B' seeks the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment. Section 'C' find out the

occupational skills needed by woodwork graduate of Futminna for self-employment while Section 'D' find out The constraints militating against the acquisition of skill by woodwork graduate of Futminna. The questionnaire items were based on four points scale types. Items for section 'B', 'C' and 'D' contain four responses category each. The response categories for section 'B', 'C' and 'D' are strongly Agree (SA), Agree (A), and Disagree (D) and strongly disagree (SD). These response categories will be assign numerical values of 4, 3, 2 and 1 respectively. Respondents were require checking (✓) against the response category that best satisfies their opinion.

3.6 Validation of instrument

The instrument will be validated by three lecturers in the department of Industrial and Technology Education, Federal University of Technology, Minna and contributions on the appropriateness of the instrument will be consider in the production of the final copy of the research instrument.

3.7 Administration of instrument

The instrument that will be used for the data collection will be administered to the respondents by the researcher and three research assistant in the study area.

3.8 Method of data analysis

Data collected will be analyzed using mean and standard deviation for the research questions while t-test will be used to test the hypothesis at the 0.05 level of significant. A four (4) point rating scale will be to analyze the data as shown below.

Strongly Agree (SA) = 4points (3.5 – 4.0)

Agree (A) = 3points (2.5 - 3.49)

Disagree (D) = 2points (1.5 – 2.49)

Strongly Disagree (SD) = 1point (1.0 – 1.49)

Therefore, the mean value of the 4 point scale is:

$$\bar{X} = \frac{4+3+2+1}{4} = \frac{10}{4} = 2.5$$

3.9 Decision Rule

The cutoff point of the mean score of 2.50 will be chosen as the agreed or disagreed point. This will be interpreted relatively according to the rating point scale adopt for this study. Therefore, an item with response below 2.49 and below were regarded or considered as disagreed while an item with response at 2.5 and above was regarded or considered as agreed. The null hypotheses were tested using t-test statistics at 0.05 level of significance in order to compare the mean responses of the respondents. A critical value of ± 1.960 was selected based on the degree of freedom at 0.05 level of significance. Therefore, every item with t-calculated values less than the critical value was regarded as not significant while every item with t-calculate value equal or greater than the critical value was regarded as significant.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

Research Question 1

What are the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment?

Table 4.1: Mean Response of woodwork lecturers and woodwork students on the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment.

N₁= 6 N₂=44

S/N	ITEMS	\bar{X}	SD	Remark
1	Be able to implement best solution in solving problems	3.68	.683	Agreed
2	Possess good self-control for efficient participation in work process	3.54	.676	Agreed
3	Be able to make decisions in a short time period	3.72	.497	Agreed
4	Participate effectively and should behave with integrity	3.44	.577	Agreed
5	Exhibit clear understanding before carrying task	3.26	.600	Agreed
6	Be highly motivated in order to participate effectively in the industry	3.28	.607	Agreed
7	Should have personal vision and goals in which they wish to achieve in life	3.36	.693	Agreed
8	should be open to new ideas and techniques should be willing to learn in any setting on and off the job for success	3.56	.611	Agreed
9	Should be able to evaluate and monitor their own performance	3.60	.571	Agreed

Key:

N=50

\bar{X} = mean of the respondents

N₁ = No of woodwork lecturers

N₂= No of woodwork students

SD = standard deviation of the respondents

Table 4.1 showed that both woodwork lecturers and woodwork students agreed on all items from 1 to 9. This is because none of the mean response was below 2.50 which was agreed on the 4-points response options. The standard deviation score ranged between 0.497 and 0.683. This showed that the responses of the woodwork lecturers and woodwork students on the items were not divergent.

Research Question 2

What are the occupational skills needed by woodwork graduate of Futminna for self-employment?

Table 4.2: Mean Response of woodwork lecturers and woodwork students on the occupational skills needed by woodwork graduate of Futminna for self-employment.

N₁= 6 N₂=44

S/N	ITEMS	\bar{X}	SD	Remark
1	Ability to observe tools safety precautions.	3.64	.663	Agreed
2	Ability to use the right holding device before sawing	3.56	.644	Agreed
3	Ability to maintain proper sawing angle between the saw and the work piece	3.46	.676	Agreed
4	Ability to use winding stick and try square to test for flatness and squareness on a piece of wood.	3.42	.575	Agreed
5	Ability to take and transfer the correct measurement using marking gauge	3.32	.551	Agreed
6	Ability to maintain proper sawing angle between the saw and the work piece	3.30	.544	Agreed
7	Ability to select the right plane for particular operation.	3.44	.675	Agreed
8	Ability to adjust blade to correct level of cutting edge.	3.56	.611	Agreed
9	Ability to set the depth of cut correctly with the adjustment lever on jointer.	3.48	.762	Agreed
10	Ability to use scraper/sand paper in removing dry adhesive from the surfaces.	3.60	.670	Agreed

Key:

N=50

\bar{X} = mean of the respondents

N₁ = No of woodwork lecturers

N₂= No of woodwork students

SD = standard deviation of the respondents

Table 4.2 showed that both the woodwork lecturers and woodwork students agreed on all items from 1 to 10. This was because none of the mean response was below 2.50 which was agreed on the 4-point response options. The standard deviation score ranged between 0.544

and 0.762. This showed that the responses of the woodwork lecturers and woodwork students on the items were not divergent.

Research Question 3

What are the constraints militating against the acquisition of skill by woodwork graduate of Futminna?

Table 4.3: Mean Response of woodwork lecturers and woodwork students on the constraints militating against the acquisition of skill by woodwork graduate of Futminna.

N₁= 6 N₂=44

S/N	ITEMS	\bar{X}	SD	Remark
1	Inadequate funding	3.36	.598	Agreed
2	Parents/students apathy towards technical education	3.36	.563	Agreed
3	Inadequate tools, equipment and training materials	3.34	.658	Agreed
4	Lack of adequate practically skilled teaching personnel	3.38	.667	Agreed
5	Admission criteria	3.38	.602	Agreed

Key:

N=50

\bar{X} = mean of the respondents

N₁ = No of woodwork lecturers

N₂= No of woodwork students

SD = standard deviation of the respondents

Table 4.3 showed that both the woodwork lecturers and woodwork students agreed on all items from 1 to 10. This was because none of the mean response was below 2.50 which was agreed on the 4-point response options. The standard deviation score ranged between 0.45

and 0.61. This showed that the responses of the woodwork lecturers and woodwork students on the items were not divergent.

Hypothesis I

There is no significant difference in the mean responses of woodwork lecturers and woodwork students on the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment.

Table 4.4: T-test on the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment.

N₁ = 6 N₂ = 50

Respondents	N	X	SD	Df	Tcal	P-value	Remark
woodwork lecturers	6	3.59	0.52	48	0.446	0.06	NS
woodwork students	44	3.50	0.59				

Key:

N=50

\bar{X}_1 = mean of woodwork lecturers

\bar{X}_2 = mean of woodwork students

N₁ = No. of woodwork lecturers

N₂= No. of woodwork students

SD₁ = standard deviation of woodwork lecturers

SD₂ = standard deviation of woodwork students

NS=Not Significant

Table 4.4 showed that there was no significant difference in the responses of woodwork lecturers and woodwork students on all the items as entrepreneurial skills needed by woodwork graduates of Futminna for self-employment; therefore the null hypothesis of no significant difference was upheld at 0.05 level of significance.

Hypothesis 2

There is no significant difference in the mean responses of woodwork lecturers and woodwork students on the occupational skills needed by woodwork graduate of Futminna for self-employment.

Table 4.5 T-test on the occupational skills needed by woodwork graduate of Futminna for self-employment.

Respondents	N	X	SD	Df	Tcal	P-value	Remark
woodwork lecturers	6	3.42	0.52	48	0.625	0.10	NS
woodwork students	48	3.48	0.68				

Key:

N=50

\bar{X}_1 = mean of woodwork lecturers

\bar{X}_2 = mean of woodwork students

N₁ = No. of woodwork lecturers

N₂= No. of woodwork students

SD₁ = standard deviation of woodwork lecturers

SD₂ = standard deviation of woodwork students

NS=Not Significant

Table 4.5 showed that there was no significant difference in the responses of woodwork lecturers and woodwork students on all the items as occupational skills needed by woodwork graduate of Futminna for self-employment.; therefore the null hypothesis of no significant difference was upheld at 0.05 level of significance.

Hypothesis 3

There is no significant difference in the mean responses of woodwork lecturers and woodwork students on the constraints militating against the acquisition of skill by woodwork graduate of Futminna.

Table 4.6 T-test on the constraints militating against the acquisition of skill by woodwork graduate of Futminna.

Respondents	N	X	SD	Df	Tcal	P-value	Remark
woodwork lecturers	6	3.58	0.61	48	0.528	0.09	NS
woodwork students	44	3.34	0.60				

Key:

N=50

\bar{X}_1 = mean of woodwork lecturers

\bar{X}_2 = mean of woodwork students

N₁ = No. of woodwork lecturers

N₂= No. of woodwork students

SD₁ = standard deviation of woodwork lecturers

SD₂= standard deviation of woodwork students

NS=Not Significant

Table 4.6 showed that there was no significant difference in the responses woodwork lecturers and woodwork students on all the items as constraints militating against the acquisition of skill by woodwork graduate of Futminna; therefore the null hypothesis of no significant difference was upheld at 0.05 level of significance.

Findings of the study

The following are the main findings of the study; they are prepared based on the research questions and hypothesis tested.

The entrepreneurial skills needed by woodwork graduates of Futminna for self-employment.

- Be able to implement best solution in solving problems
- Possess good self-control for efficient participation in work process
- Be able to make decisions in a short time period

- Participate effectively and should behave with integrity
- Exhibit clear understanding before carrying task
- Be highly motivated in order to participate effectively in the industry
- Should have personal vision and goals in which they wish to achieve in life
- should be open to new ideas and techniques
- should be willing to learn in any setting on and off the job for success
- Should be able to evaluate and monitor their own performance

The occupational skills needed by woodwork graduate of Futminna for self-employment

- Ability to observe tools safety precautions.
- Ability to use the right holding device before sawing
- Ability to maintain proper sawing angle between the saw and the work piece
- Ability to use winding stick and try square to test for flatness and squareness on a piece of wood.
- Ability to take and transfer the correct measurement using marking gauge
- Ability to maintain proper sawing angle between the saw and the work piece
- Ability to select the right plane for particular operation.
- Ability to adjust blade to correct level of cutting edge.
- Ability to set the depth of cut correctly with the adjustment lever on jointer.
- Ability to use scraper/sand paper in removing dry adhesive from the surfaces.

The constraints militating against the acquisition of skill by woodwork graduate of Futminna

- Inadequate funding
- Parents/students apathy towards technical education
- Inadequate tools, equipment and training materials

- Lack of adequate practically skilled teaching personnel
- Admission criteria

Discussion of findings.

Result from table 4.1 shows the findings on the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment, the findings revealed that students should be able to implement best solution in solving problems, Possess good self-control for efficient participation in work process, Be able to make decisions in a short time period, Participate effectively and should behave with integrity, Exhibit clear understanding before carrying task, Be highly motivated in order to participate effectively in the industry, Should have personal vision and goals in which they wish to achieve in life, should be open to new ideas and techniques, should be willing to learn in any setting on and off the job for success, Should be able to evaluate and monitor their own performance. Entrepreneurial skill is an essential skill for woodwork graduate to possess in order to be able to fit in the world of work. The findings of the present study is in line with omeje (2013) development of basic entrepreneurial skill in Woodwork is a sure way of guaranteeing students self-reliance in the society. However this can only be achieved when a more aggressive but potent type of entrepreneurial skill development organized in real work situation is adopted, rather than its inclusion in the curriculum without adequate practical content.

Table 4.2 shows the result of the findings on occupational skills needed by woodwork graduate of Futminna for self-employment. The findings reveal that Ability to observe tools safety precautions, Ability to use the right holding device before sawing, Ability to maintain proper sawing angle between the saw and the work piece, Ability to use winding stick and try square to test for flatness and squareness on a piece of wood, Ability to take and transfer the correct measurement using marking gauge, Ability to maintain proper sawing angle between

the saw and the work piece, Ability to select the right plane for particular operation, Ability to adjust blade to correct level of cutting edge, Ability to set the depth of cut correctly with the adjustment lever on jointer, Ability to use scraper/sand paper in removing dry adhesive from the surfaces. Operational skills are essential skills required by woodwork graduate. The findings of the study is in agreement with Bakare and Fadairo (2010) observed that when the required skills are given to learners, they will be competent to work efficiently with little or no supervision. Therefore, the items found required should be taken very serious during training and re-training process of teachers to update their knowledge and skills in woodwork.

Result from table 4.3 shows the findings on the constraints militating against the acquisition of skill by woodwork graduate of Futminna. The findings revealed that Inadequate funding Parents/students apathy towards technical education, Inadequate tools, equipment and training materials, Lack of adequate practically skilled teaching personnel, Admission criteria. Fafunwa (1992), in his views on the state of funding of Technical College of Education in Nigeria states thus: Modern technical college is capital intensive and changing nature of technologies it deals with and that this tends to escalate cost. But the government is not always in a position to grant the required as cited from Chanchan, (1998). Aguakobuo (2003), many good educational innovations, policies and instruments and students services need money. It is the financial foundation that actually determines the adequacy and relevance of school teaching materials, physical learning environment, and teacher's remuneration e.t.c. Incidentally all these influence the level of skills acquisition by students. With the irregular and most times, delayed payment of teachers salaries, couple with the dwindling economy, most teachers now spend more times moonlighting than teaching as high inflations reduces the values of their salaries.

Mbata (1999) where he emphasized that students should be allowed their intrinsic intelligence, interest, aptitude and initiative to the highest possible degree and that training should be given to those who need it and can profit it.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of the Study

The main focus of this research study was to find out the entrepreneurial and occupational skills need for self-employment by woodwork graduates of Futminna.

Chapter 1 of the study discussed the background of the study, which examines. The statement of problem, purpose, significance, scope and the research questions were all stated and discussed for the conduct of this research.

The review of related literature looked into concept of Skill Acquisition, Concept of self-employment, Woodwork Technology, Concept of Entrepreneurship, Operational skills, Modern Woodwork Technology Tools and Equipment. Various views of different authors concerning the topic were harmonized in a comprehensive literature review and empirical studies.

A survey approach was used to developed instrument for the study; the respondents identified as the population of the study were the woodwork lecturers and woodwork students. The entire respondents were used. A number of 50 questionnaires were administered. The instrument used was analysed using mean, standard deviation and t-test. The research questions were discussed base on the findings from the responses and results of the instrument used.

Implication of the study and conclusions were also drawn from the findings discussed. Recommendations and suggestions for further study were formulated and stated according to the findings of the study.

Implication of the Study

The findings of this study have some implications on woodwork lecturers and students of futminna, the government at all levels i.e. federal, State and Local; educational institution, as

well as the society at large. If the result of this study is given due consideration and implemented, the entire educational institutions in the country would be revamped to give adequate provisions to technical skills in woodwork right from the school level; this will give room to adequate provision of technically proficient teachers to our technical colleges and other technical institutions. The effect of this would remove apathy in the parents' mind towards sending their words to technical college.

The implication of adequate provision of technically proficient teachers to technical colleges and the consequential turn-around resulting from the removal of parents/students apathy could enhance technical manpower development in woodwork in the state particularly and the country of large.

Conclusion

Based on the findings of the study, the following conclusions were drawn: In the light of pre-determined goals and objective for establishing the technical institution by government toward skills acquisition for self reliance, various problems arose. The problems include, majorly, the non-exposure of parents to the prospects in woodwork trade there by resulting to parent being biased as well as student nonchalant attitude; inadequate teachers/ training material and poor government funding.

The past we all know is gone, but the present is which we can improve upon with high hopes for the bright future which is yet to be. Definitively, the researcher has observed the obstacles militating against acquisition of skills vis-à-vis woodwork trade, by woodwork students in future; the observed obstacles should be removed.

Recommendations

1. Awareness campaign by the government is very relevant to gearing up the parents/students towards realizing the prospects in the woodwork trade. This would

help remove elements of bias by parents as regards the institution their children would be sent to i.e. university and NOT technical college as they used to prefer. The campaign should be done in such a way that parents/students would be exposed to some achievements of the past and present woodwork industrialist.

2. The government should Endeavour to make learning very easy and attractive to students. This can be done by providing textbooks and learning materials to technical college students and means of transport should also be provided where necessary. If possible hostel should be provided for student's comfort.
3. A revolving fund should be voted every year by government to support the activities of wood workshop teaching activities in technical institutions

Suggestion for Further Study

The following are suggested for further studies:

1. Entrepreneurial and occupational skills need for self-employment by woodwork graduates of in other institution
2. Entrepreneurial and occupational skills need for self-employment by in order fields.

REFERENCES

Acs, A.J. and Varga, A. (2005). Agglomeration, entrepreneurship and technological change. *Small Business Economics*. 23(2), 271 – 280.

- Acs, Z. (2006). How is entrepreneurship good for economic growth? *Innovations*, winter, 97 – 109.
- Akinwumi, O. O. (2012). Entrepreneurship: A pathway to wealth creation. Retrieved :<http://tribune.com.ng/index.php/opinion/50667-entrepreneurship-a-pathway-to-wealth-creation>.
- Akonbowa, B.A. (2005). Entrepreneurship roles and factors affecting entrepreneurship. A quarterly publication of the chartered institute of administration. 5 (2) 63 – 69.
- Annoe ,(2000) Early Determinant of Vocational Choice. *Journal of counseling*
- Arogundade, B.B. (2011). Entrepreneurship education: An imperative for sustainable. *International Journal of Education Research*. 13(1),61
- Becksvoort, C. (2013). *Fine woodworking stools: Plans and project*. Retrieved on January 29, 2013 from <http://www.woodworkersworkshop.com/store/indexpht?app=ccpo>
- Butler, J.(2009). Entrepreneurship and wealth creation through technology transfer. Retrieved:[http://diversitybomagazine.com/entrepreneurship and wealth creation through technology transfer](http://diversitybomagazine.com/entrepreneurship-and-wealth-creation-through-technology-transfer).
- Caree, M. & Thurik, A.R. (2002). The impact of entrepreneurship on economic growth international handbook of entrepreneurship research. Boston/Dordrecht: Klumer Academic publishers.
- Casson, M. (2005). The individual –Opportunity Nexus: A review of Scott Shane: The general theory of entrepreneurship. *Small Business Economic*. 24 (5). 423 – 430.
- Ezewu, E.E. (1984). Towards a taxonomy of educational objectives in psycho-productive domain. *Nigerian Journal of Technical Education* 2(1), 56-60.
- Federal Republic of Nigeria (2004). National Policy on Education, Nigeria. Yaba, Lagos, NERDC Press.
- Federal Republic of Nigeria (2014). *National policy on education (Revised)*. Lagos; Federal Ministry of Education Press.
- Gall, M.D. (1981). Handbook for Evaluation: *The selecting curriculum materials*. Boston: Allyn and Bacon.
- George, E. (2009). *Woodwards country homes*. New York City: Crown Publishers
- Krevisky, J & Jordan, L. I (1994). Webster *encyclopedia unabridged dictionary of the english language*. New Jersey: Gramery Book Inc. Publishers.
- Kumaran, M.K. (2003). *Wood products used in single-family house construction*.
- McCarthy, W.J. (2001). Machine Tools. New York ; Industrial Press Incorporation.
- McGraw (2013). The jargon file's to Hacker slang tools, definition and synonyms. Retrieved on January 23, 2013 from <http://www.answer.com/topic/tool-4>

- Meredith, O. (1983). *The practice of entrepreneurship*. Geneva: International Labour Office.
- Miller, A. (2011). Analysis of the problems and prospect of the technical college teachers in Nigeria. A proceedings of the 2011 international conference on teaching, learning and change. International association for teaching and learning (IATEL). Held at Dept. Of Woodwork Technology, Federal College of Education (Technical), Omoku, Nigeria.
- Ndinechi, G.I. (1994). School – Industry Linkage in Vocational technical Education. Paper presented at the National Conference on vocational /Technical Education, held at the Federal College of Education (Technical) Umunze.
- Nigerian Educational Research & Development Council (NERDC) (2012). *9 years basic education curriculum (Basic Science and Technology for junior secondary 1- 3)*. Federal Ministry of Education, Abuja.
- Obi, W.J.D. (2010) Practical Based Skill Oriented Entrepreneurship Training in Secondary and Tertiary Institutions for Realization of Millennium development Goals. *Journal of Technical Education Research and Development (JOTERD)*. Research and Conference Unit. F.C.E. (T), Umunze.
- Odewole B.M., (2018). Teaching skills required by graduating technology education students to enhance implementation of basic science and technology in secondary schools in chanchaga LGA minna. An unpublished research project department of ITE futminna.
- Ofsted, O. (2007). *Adults courses: Practical furniture making level 1*. Retrieved on January 20, 2013 from <http://www.bridgewater.ac.uk/course/php?sector=2&sub>
- Okorie, J.U. (2000) *Developing Nigeria's Workforce*. Calabar. Macnky Environs Publishers.
- Okorie, J.U. (2000). *Developing Nigeria's work force*. Calabar. Page Environs publishers.
- Okoro, O.M. (1993). *Principles and method in vocational and technical education*. Nsukka University Trust Publishers.
- Okoro, O.M. (1993). *Principles and method in vocational and technical education*. Nsukka University Trust Publishers.
- Olaitan, S.O. (2004). *The theory and practice of Vocational Education in Africa*. Pp34,36 & 40
- Olumese, H.A. (2004). Vocational and technical education in Nigeria: Issues, Prospects and Problems. *Journal of Curriculum Organization of Nigeria*, 2(1), 11-16.
- Ominabo, J.N. (2005). Strategies for promoting the employability of Mechanical Technology Graduates of Industrial Education in Nigeria Universities. Unpublished M.Ed. Thesis University of Nigeria Nsukka. Onitsha; Cape publishers International Limited.
- Omoje H.O., (2013). Entrepreneurial skill development in woodwork trade: a panacea to challenges of youth unemployment. *Mediterranean Journal of Social Sciences*. Vol 4 No 8

- Osuala, E.C. (1998). *Foundation of Vocational Education* (4th ed.). Onitsha: Cape Publisher Int. Ltd.
- Ozioko, T.O. (2007). Strategies for Enhancing the Employability of Electrical Technology graduates of Technical Institutions in South Eastern states. Unpublished thesis University of Nigeria Nsukka.
- Padelford, H.E. (1984). *Acquiring Psychomotor Skills*. Ann Arbor: University Microfilms International, 4(2); 27-37
- Pam, S. (2004). Improving technology education towards realization of vision 2010 objectives. *Pankshin Journal of Vocational Education*, 4(1), 5-9.
- Portals, S. (2007). *The European study choice platform*. Retrieved on January 22, 2013 from www.ehow.com/toolsforwoodworking Psychology Page217-219.
- Robinson, A. (2000). *Skills Gap Is Big Concern of Employers Today*. Retrieved 16 July 2011 from [http:// www.aces.edu/dept/extcomm/newspaper/](http://www.aces.edu/dept/extcomm/newspaper/)
- Sackey, J.K.N. (1999). *Vocational and technical education. Motivate: Macmillan texts for industrial woodwork technology*. Retrieved on January 24, 2013 from www.macmillan.caribbean.com/book.aspx?d-1008
- Sam, L. (2006). Man, machines and history. The story of tools and machines in relation to social progress 1948. Cobbet Press. Retrieved on January 23, 2013 from <http://www.answer.com/topic/tool4>
- Sara, H.A. (2001). The production of technology teachers for technological development in Nigeria: Problems and strategies. *Journal of Vocational Education*, 3(1), 12-18.
- Singer, R.N. (1981). The Psychomotor Domain. *General Considerations*. In the Psychomotor Domain, Washington D.C. Cryphone House 7-42.
- Toby, T.U. (1997). *Essentials of Management and Leadership in Vocational and technical education* Jos. Nigeria Association of Teachers of Technology.
- Ugwoke, S. C., Onomereroso, M. E. and Abidde, E.(2014). Entrepreneurial skill Development in Basic Education for Wealth creation. *International Journal of Educational Research*. 13(1),65-80.
- Ugwuda, A.O. (2014). *Mathematics education: A vehicle for quality entrepreneurial skills and competencies for attaining vision*. 20:2020. 13(1), 108 – 116.
- Umar, M. I. (2014). Skills Required by Woodwork Technology Teachers for Improving Practical Projects In Technical Colleges in Kano and Jigawa States in North-western Nigeria. University of Nigeria, Nsukka
- Usioboh, S.A. (2007). The education reform agenda-Challenges and prospects for tertiary education in Nigeria. *Journal of National Association of Professional Secretarial staff of Nigeria*. 12(5), 54.

Appendix
QUESTIONNAIRE

FEDERAL UNIVERSITY OF TECHNOLOGY MINNA, NIGER STATE

SCHOOL OF SCIENCE AND TECHNOLOGY EDUCATION

DEPARTMENT OF INDUSTRIAL AND TECHNOLOGY EDUCATION

**A QUESTIONNAIRE ENTREPRENEURIAL AND OCCUPATIONAL SKILLS NEEDED
FOR SELF-EMPLOYMENT BY WOODWORK GRADUATES OF FUTMINNA**

INTRODUCTION: Please kindly complete this questionnaire by ticking the column that best present your perception about the topic. The questionnaire is for research purpose and your view will be confidentially and strictly treated in response to the purpose of the research work.

SECTION A

PERSONAL DATA

Lecturers:

Woodwork students:

Note: A four (4) point scale is used to indicate your opinion, tick the options which best describe your agreement as shown below:

Strongly Agree (SA) = 4points

Agree (A) = 3points

Disagree (D) = 2points

Strongly Disagree (SD) = 1points

Section B: What are the entrepreneurial skills needed by woodwork graduates of Futminna for self-employment?

S/N	Items	Scales			
		SA	A	D	SD
1	Be able to implement best solution in solving problems				

2	Possess good self-control for efficient participation in work process				
3	Be able to make decisions in a short time period				
4	Participate effectively and should behave with integrity				
5	Exhibit clear understanding before carrying task				
6	Be highly motivated in order to participate effectively in the industry				
7	Should have personal vision and goals in which they wish to achieve in life				
8	should be open to new ideas and techniques should be willing to learn in any setting on and off the job for success				
9	Should be able to evaluate and monitor their own performance				

Section C: What are the occupational skills needed by woodwork graduate of Futminna for self-employment?

S/N	Skill Items	Scales			
		SA	A	D	SD
1	Ability to observe tools safety precautions.				
2	Ability to use the right holding device before sawing				
3	Ability to maintain proper sawing angle between the saw and the work piece				
4	Ability to use winding stick and try square to test for flatness and squareness on a piece of wood.				
5	Ability to take and transfer the correct measurement using marking gauge				
6	Ability to maintain proper sawing angle between the saw and the work piece				
7	Ability to select the right plane for particular operation.				
8	Ability to adjust blade to correct level of cutting edge.				

9	Ability to set the depth of cut correctly with the adjustment lever on jointer.				
10	Ability to use scraper/sand paper in removing dry adhesive from the surfaces.				

Section D: What are the constraints militating against the acquisition of skill by woodwork graduate of Futminna?

S/N	Skill Items	Scale			
		SA	A	D	SD
1	Inadequate funding				
2	Parents/students apathy towards technical education				
3	Inadequate tools, equipment and training materials				
4	Lack of adequate practically skilled teaching personnel				
5	Admission criteria				