



Research Paper

# Implications of Improved Ethno-Based Practical Skills on Woodwork Technology Education Students for National Development

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## Abstract

This study on the implications of improved ethno-based practical skills on woodwork technology education students is to show what improvement the introduction of the ethno-based education may have on students of woodwork technology for national development. Improvement of the value of graduates for better employability is needed perceiving the fact that technology and products are changing tremendously. Two research questions guided the study. The study adopted a Quasi-experimental design. Data were collected through observational method from a population of 21 woodwork technology students. An instrument was developed by the researcher and validated by three experts. Table of specification was used to determine the reliability of the instrument. Data were analyzed using mean scores. Mean scores of the students were determined to answer the two research questions. The result of the study indicates that improved ethno-based practical skills means of teaching has high effect on the students because students tend to relate teaching to the traditional practices. Among the suggestions were that improved ethno-based practical skills teaching should be prioritized in schools, especially in TVET related institutions.

(**Keywords:** Practical Skills, Ethno-based, Development, Machine Woodworking, Wood Carving)

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## I. INTRODUCTION

### Background to the Study

Most developing nations are struggling to meet up with the trend of the global moving train. Countries like China, India, North Korea and the likes are joining the trend but Nigeria is yet to measure up to expectation even while it answers giant of Africa and with her level of economic growth as best in Africa. This issue of diversion in the growth of the economy is based on the fact that Nigeria is facing the foreign culture and running away from the native cultural values which have to do with vocational applications. This may not be farfetched from the fact that the listed countries apart from Nigeria embraced the adaptation and combination of Technical Vocational Education and Training (TVET) to their tradition and culture.

To compete globally, nations are queuing up and aligning to the new economic improvement for their national development. There are lots of indices under check for qualification to become a developed country and one of such is self employment of citizens which brings about small business enterprises. The purpose of TVET is to make people self-employable and to be a vehicle of transition for individuals to the world of work (Hollander and Mar, 2009). Consequently, in the perfect case, TVET leads to self-employment and income generation which is expected to contribute to the general well being of the individuals and communities. United Nations (UN) has the agenda of developing the poorer nations as well as trying to spur them into the struggle to meet up with the developed countries. It is believed that increasing the value of TVET in the poorer nations will increase industrialization and bridge the gap between developed and developing nations. This gap may be

reduced if the developing countries like Nigeria return back to the yesteryears, where culture and traditional values are given considerations instead of much interest in foreign cultures.

There is no gainsaying the fact that TVET is often considered as a mechanism for poverty alleviation. International development goals are mostly achieved through contributions of TVET applications in systems. Woodwork technology is basically one of the areas of interest in TVET that helps nations become developed by increasing the Gross Domestic Product per capita. Nevertheless, value system has changed the school contents, methods, and approaches to teaching-learning. Scholars like Omar, Khuan, Kamaruzaman, Awang, and Jamal (2011) maintained that introduction of technology as a novelty in the educational sector has transformed the trend and profile of students; created new needs in knowledge and technology areas; and modified the roles and function of schools, making them more challenging than ever before. If introduction of technology in developing countries took cognizance of the local content and put into consideration the cultural background of the affected areas adaptation would be easier. For the mentality of real Africans, who believe that every foreign object is superior it becomes difficult to adapt to the cultural value therefore pulling the culture and traditional ways and values to the mud as well as rejecting them and what comes out of them.

There is a continuous rapid development in technology and value for appliances which have motivated the interest in the need to update teachers' competencies to make them relevant and increase value in education. This reality needs to be accepted by education stakeholders as such practical training intensification is imminent because much interest is vested in western values other than in culture and tradition. The quality of teachers is what they can give while teaching. Hence the value and standard of education in Nigeria depends on the quality of the teachers (Nwabuisi, 2008) as such an urgent need for proper teachers' ethno-based capacity building in areas of woodwork technology education like machine woodworking, wood carving, upholstery, et cetera. The Woodwork Technology students who are would be teachers need to be well equipped to fill the needed gap in ethno-based practical classes to bring back the required cultural and tradition ways of woodworking and transform them into a well meaningful technology, copying from countries like China and India.

Machine woodworking is that area of woodwork where the students' skills and knowledge in the use of wood working machines for the preparation of timber components for joinery and furniture construction are increased (Onaga, 2015). The students learn working principles, functions, simple routing maintenance and methods of operating woodwork machines. Woodcarving is an ancient form of decoration consisting of cutting or making designs in solid wood by means of chisels, gouges and knives. Wood carving according to Wikipedea (2020) is a form of woodworking by means of a cutting tool (knife) in one hand or a chisel by two hands or with one hand on a chisel and one hand on a mallet, resulting in a wooden figure or figurine, or in the sculptural ornamentation of a **wooden** object. NABTEB syllabus (2001) stated that Upholstery making is the work of providing furniture, especially seats, with padding, springs, webbing, and fabrics or leather covers. The term is applied to domestic and office furniture in addition to automobiles, airplanes and boats.

Unfortunately, paucity of practical classes in the woodwork related subjects in Colleges of Education (Technical) increases the number of unemployed youths within the society and have made the nation unable to meet up with the emerging challenges of the 21<sup>st</sup> century because the quality of graduates cannot be compared with that of the developed countries. This is mainly because it is difficult to adapt the changing technologies that come in from the foreign countries. On the other hand if developments of machines are localized and cultural based adaptation would be easier and smoother. FRN (2013) maintained that no nation could grow above the quality of its teachers this is because the adaptation level is poor. By the time the teachers' capacity building on a given machine is actualized, a new development comes and up grading is as well required therefore creating serious technology gap. As a matter of this, most woodwork students of Colleges of Education (Technical) are ill prepared for meeting the challenges of modern times as some of their wood products lack aesthetics, durability and strength to match the architecture of today. On the other hand they may lack the ability to enter the classrooms and develop the younger generation who automatically come into the class with diverse technology awareness. To fill in this gap, technology should be culturized and made to have a traditional under tone. This will improve training even while in school because most students see and interact with the training equipment within the local environment. Consequently, Ogwo and Oranu (2006) noted that training offered in school system is not enough to guarantee expertise in most occupational areas in recent time thereby suggesting increase in practical classes for woodwork technology students in Colleges of Education (Technical) to increase skill base. This can also improve if the technology in question is localized. When the would-be teachers' knowledge and skill base increases, transfer of knowledge becomes eminent, therefore students learn and national development improves. Thus the purpose of the study is to determine the effect of improved ethno-based practical skill on colleges of education (technical) students in upholstery and machine woodworking for national development. Specifically the following research questions were formulated to guide the study:

1. What is the effect of improved ethno-based practical skills on Colleges of Education (Technical) students in machine woodworking for national development?

2. What is the effect of improved ethno-based practical skills on Colleges of Education (Technical) students in upholstery making for national development?

**Methodology**

A quasi experimental design was adopted for the study. Two schools with the same National Commission for Colleges of Education (NCCE) minimum standard were used for the study. While practical classes were improved in one, the conventional approach was used in the other. The population of the study is 21 woodwork students of Colleges of Education (Technical) in South East Nigeria which also served as the sample for the study. The researcher taught the two groups the skills but increased the time of teaching one of the groups. After the teaching period the students were tested with same tests and decisions were taken based on the performance of the groups. Three experts validated the tests used as the instrument. Table of specification was used to determine the reliability of the instrument. Mean scores of the students were determined. The test has 20 tasks and was given 5% for each task correctly performed to make up 100%. The differences between the mean scores of the two groups show whether the effect is positive or negative.

**Research Question 1**

What is the effect of improved practical skills on Colleges of Education (Technical) students in machine woodworking for national development?

Table 1

*Scores on the effect of improved practical skills on Colleges of Education (Technical) students on Upholstery*  
*N = 21*

S/N	Item	Control group scores	Experimental group scores	Difference
1	Transferring measurements on stocks	2	4	2
2	Skill on framing skeleton for cushions seats.	2	3	1
3	Using squares for marking out lines and squaring materials.	2.5	4.5	2
4	Skill on hand sewing of fabrics and leather.	1	4	3
5	Skill on making appropriate choice of fabrics.	3	5	3
6	Skill on the use of staple machines.	4	4	0
7	Skill on padding of seats	1.5	4	2.5
<b>Total Mean scores</b>		<b>16</b>	<b>28.5</b>	<b>12.5</b>

Table 1 above represents the average scores of the students on upholstery tasks performed by the two different groups used for the study. In all the tasks except the task 6, differences exist among the two groups. Tasks 1,2,3,4,5 and 7 has positive differences indicating that the experimental group has better scores of 28.5 marks than the controlled group of 16. The difference between the two groups is 12.5. this shows that the experimental group is better with an average of 12.5 marks. This means that improving the practical skill will definitely increase the students' learning standard.

**Research Question 2**

What is the effect of improved practical skills on Colleges of Education (Technical) students in machine woodworking for national development?

Table 2

*Scores on the effect of improved practical skills on Colleges of Education (Technical) students on Machine Woodworking.*  
*N = 21*

S/N	Item Statement	Control group scores	Experimental group scores	Difference
8	Operating band saw machine.	1.5	4	2.5
9	Skill on operating router.	2	3.5	1.5
10	Skill on operating multi-purpose machine.	2	4	2
11	Skill on operating radial arm saw.	3	4	1
12	Skill on operating wood lathe	1.5	4	2.5
13	Skill on operating mortise machine	2	3.5	1.5
14	Skill on operating spindle molders.	1	3	2

15	Operating sanders.	3.5	5	1.5
16	Operating drilling machines	3	4.5	1.5
17	Operating boring using mortising	2	4.5	2.5
18	Operating tenon using mortising machines	2	4	2
19	Knowledge on setting of planer knives.	2	3.5	1.5
20	Knowledge on workshop safety operations.	4	4	00
	<b>Total</b>	<b>29.5</b>	<b>51.5</b>	<b>22</b>

Table 2 above represents the average scores of the students on machine woodworking tasks performed by the two different groups used for the study. The average scores the experimental group of 51.5 against that of the controlled group of 29.5 shows that the improved practical skills has high effect. This is evident in the individual mean scores of the tasks used for the study.

## **II. Discussion of findings**

The result of the study as shown in Tables 1 and 2 indicates that improved practical enhances learning over the conventional method. This means that there is high effect of improved practical on upholstery and machine woodwork. The mean scores of the respondents show a difference of 12.5 and 22 for upholstery and machine woodworking respectively. The result of the study is in agreement with the findings of Kibirige, Maake, and Mavhunga (2014) whose result established that practical work improves students understanding and increases interest in learning. Also it agrees with Amponsah, Addo-Mensah, Anokye, Babah, and Etsiwah, (2019) who asserts that practical work and motivation of students increases students desire to study STEM related subject.

### **Implication for Ethno-Based**

Okwaria (2017) believed that ethno-based education may enhance the achievement of students in new technologies. Because ethno-based instruction has to do with the culture of teaching and impacting technological knowledge and skills for sustainable national development, the result of the study agree that it is an effective means of teaching. The ethno-education may refer to the materials, ideas, beliefs and technology in a given society or environment, derived from the past and present cultural practices and traditions of students. Ugwuanyi (2015) maintained that these may evolve from myth, supernatural, and mystical realities as well as ongoing acculturation in the environment. Sanga (2004) posits that ethno-education is the knowledge that is of indigenous to particular groups of people, their language, beliefs, technologies and cultures. In other words ethno-education is the study of humans' interaction with the natural environment and the construction of realities that link culture with advance scientific knowledge. The use of improved practical means for teaching woodwork relating to the cultural value of a people is an ethno-based education and need to be encouraged for national development. For instance, the traditional production of musical instruments and wooden home appliances like wooden gong, Ikoro, traditional institution stools for kings, artifacts and others may be encouraged. Traditional and cultural images used in decorating houses and the environment may improve if there is improvement on the ethno-based education in woodworking technology. The use of the new and improved technology and practical values to produce these materials will change the mindset of many youths to understand that some of those locally made material as mentioned above and more are not fetish as ascribed. This will improve the ethno-based education and bring studies back to the cultural value especially in Africa, where cultural values are relegated to the background for foreign technologies. The development of an ethno-based education will help in the transformation of the local based technologies in new developments and Africa can start competing with foreign technologies. This may work especially when education is based on cultural values and traditional status. This is to keep in mind one of the objectives of the National Policy on Education which states that measures shall be taken to ensure that the culture of the nation is kept alive through the teaching and visits to museums (FGN, 2013). No doubt that the adaptation by some students to the traditional and cultural background of carving in woods may give the students the opportunity to carve a niche for themselves in woodworking. This achievement may further define the innate creative sensibilities and adopt them within essential ingredients that may pivot the in contemporary Nigerian environment for national development.

fect of Practical Work on Grade 10 Learners' Performance in Science in Mankweng Circuit, South Africa

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### **III. Conclusion and recommendation**

Based on the result of the study it is deduced that improving practical lessons will definitely enhance the students' interest in learning woodwork technology practices. This tends to support the saying that students learn more and faster when taught with concrete objects than in the use of abstract means of teaching where students do not see anything relating to what they intend to learn. It is therefore recommended that

1. Improving practical teaching should be prioritized in the schools, especially in TVET related schools.
2. Practical lesson time must be increased to give more room for the students to practice the given tasks instead of making the theoretical.
3. Also, cultural values of the society must be prioritized and developed to match the technology moving trend.

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