

## TEACHER-RELATED FACTORS AFFECTING PRACTICAL SKILL ACQUISITION AMONG ELECTRICAL INSTALLATION AND MAINTENANCE WORK (EIMW) STUDENTS IN GOVERNMENT SCIENCE AND TECHNICAL COLLEGES OF GOMBE STATE

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### Abstract

*The study examined Teacher Related Factors Influencing Practical skills acquisition among electrical installation and maintenance work trade students (EIMW) in Government science and technical colleges of Gombe state. The study has two purposes, two corresponding research questions and two null hypothesis that were tested at 0.05 level of significance. The design of the study was a descriptive survey design, the population of study was 60 respondents which consist of 36 teachers and 24 administrators across the eight Government Science and technical colleges of Gombe State. The instrument for data collection was a structured questionnaire constructed by the rese archers based on five scale whiwh was validated by three experts. The instrument was trial tested on 5 teachers and 5 administrators in Government science and technical college Numan, Adamawa state. Cronbach Alpha was used to compute the internal consistency of the instrument which yielded a reliability index of 0.89. Mean and standard deviation were used to answer research questions. While, Independent t-test was used to test the null hypotheses at 0.05 level of significance. The findings of the study revealed that lack of teachers' interest in teaching affects students' acquisition of practical skills, also The finding showed that students' aspirations does not affects practical skills acquisitions the study, therefore, recommended that there should be continuous training and re-training of EIMW teachers who should be able to equip Government Science and Technical College graduates with the skills needed in the industries and/to be self-reliant and enterprising, encourage students centered teaching methods with adequate teaching materials and equipment and Gombe State government should equip and upgrade technical colleges with modern tools and equipment that suits the modern day industrial needs amongst others.*

### Introduction

The quest for humans to master and maintain their environments to suit and meet their needs as taken the center stage in modern day technology, this quest has continually increased the need for well trained and efficient workforce, effective training in skills acquisition immensely contributes to the development and economic self-reliance of the individual and the nation at large (Amaehula & Nwanaka, 2013). Given the significance of Technical Education in accelerating social-economic growth, and technological progression, the Federal Government of Nigeria has establish clear objectives for Technical Education within the Educational policy on education which include the following:

- (a) Provide trained manpower in the applied sciences, technology and business particularly at craft, advanced craft and technical levels
- (b) Provide the technical knowledge and vocational skills necessary for agricultural, commercial and economic development
- (c) Give training and impart necessary skills to individual who shall be self-reliant economically (FGN 2004)

These objectives are attainable through proper teaching/learning process by well trained and skilled teachers or instructors who can impart formal knowledge and technical skills in Technical and Vocational Institution in Nigeria like technical colleges (Ahmed, Chinda & Kwami, 2014). These

skills training make students from various trades of Technical Colleges to harness materials and engage in economic production (Magnus, 2015), because many nations were transformed through technical education Amaehule and Nwanaka (2013). Amaehule and Nwanaka further argued that for Nigeria to advance technologically, they must possess skills to process raw materials to finish products. Therefore, developing and maintaining machineries and equipment to meet this needs must be a focal point of all administrators in technical and vocational education institutions.

Technical and vocational education plays a vital role in developing skill manpower for economic growth and self-sufficiency. Therefore, the implementation of technical and vocational education programs cannot be successful if competent teachers are not put in place. This is why Diraso (1997) consider competent teachers as an essential component for a successful implementation of Vocational and Technical Education programmes. These teachers are technical experts that have undergone professional training therefore are capable of inculcating skills and theoretical knowledge in various trades in technical colleges. However, student's desirable learning outcome does not depend only on the teacher's competency but teacher's motivation and availability of workshop facilities Arong and Ogbadu (2010). Thus, teacher's motivation and availability of workshop facilities for training and job satisfaction also play vital roles in ensuring a successful teaching/learning process. Teachers, as key stakeholders significantly influence students learning outcomes. In addition, teacher related factors such as teacher's qualification, teaching methods and experience are pointers that can impact students' practical skill development in technical colleges especially in Electrical and Installation Maintenance Work trade Ogbuanya and Attahiru,( 2017)

Electrical and Installation Maintenance Work trade is so critical that it requires hands-on skills that should be able to meet industry needs in a developing nation

like Nigeria. Hence, the need to investigate the teacher related factors affecting practical skill acquisition among EIMW students in Government science and technical colleges of Gombe state.

### **Statement of the problem**

Despite efforts by Governments huge funding to ensure quality technical education, it is still worrisome to note that technical college graduates still lack the necessary skills needed to make them self-reliant and enterprising (Abubakar & Musa, 2015). Technical college graduates are still seen roaming the streets in search of white-collar jobs in Government and non-governmental organizations, additionally, they are still unable to further their studies because they lack the requisite requirement needed to gain admission into higher institution of learning in Nigeria and beyond Chiamogu (2013) These setbacks are not un-connected to teachers-related factors like teacher's qualification and experience, teachers' skill and teaching methods. If this situation is left unchecked, the end result can be disastrous.

Therefore, this study aims to identify and examine the teacher-related factors affecting practical skill acquisition among EIMW students, by providing insights for improved instructional strategies and teacher development.

### **Purpose of the Study**

The main purpose of this study is to determine teachers' related factors that affect practical skills acquisition among EIMW students in Government Science and Technical Colleges of Gombe state. Specifically, the study seeks to find:

- 1 Teachers related factors that affects practical skill acquisition by EIMW students in Government science and technical colleges of Gombe state.
- 2 Job aspiration related factors that affect EIMW students' practical skills acquisition in Government science and technical colleges of Gombe state.

### Research Questions

The following research questions were raised to guide the study

- 1 What are the teachers' related factors that affect acquisition of practical skills by EIMW students in Government science and technical colleges of Gombe state?
- 2 What are the job aspiration related factors that affect EIMW students' practical skills acquisition in Government science and technical colleges of Gombe State?

### Hypothesis

The following corresponding hypothesis were formulated to guide the study.

- 1 There is no significant difference in the mean response of school administrators and EIMW teachers on factors that affect students' practical skill acquisition in EIMW
- 2 There is no significant difference in the responses of school administrators and EIMW teachers on factors that effect of students' job aspiration on practical skill acquisition by EIMW students

### Methodology

The design for the study was a descriptive survey design, the study was conducted in Gombe State, Nigeria, Purposive sampling technique was used to select six Government science and technical colleges out of the eight Government science and technical colleges own by Gombe state Government, with a

population of 60 participants, which consisted of 24 school administrators, and 36 EIMW teachers. There is no population size reduction for the school administrators and EIMW teachers due to the manageable size of the population. The instrument for data collection was a structured questionnaire. The questionnaire was designed by the researcher based on five points scale. Three (3) experts validated the instrument, two from the department of Electrical Technology Education MAUTECH Yola, Adamawa state and one from Electrical/Electronic technology department, FCE (T) Gombe, Gombe state. The instrument was trial tested in GSTC Yola, Adamawa state. A reliability of 0.89 was obtained using Cronbach Alpha. The researcher with the help of five (5) research assistants administered and retrieved questionnaires in the six Government Science and Technical Colleges offering EIMW in Gombe State. The data collected were subjected to descriptive and inferential analysis. The mean analysis was used to answer the research questions, while T-test was used to test the null hypotheses at 0.05 level of significance.

### Results

The results of the study are presented based on the research questions and the hypotheses employed.

#### *Research Question 1*

What are the Teachers' related factors that affect acquisition of practical skills by EIMW students?

**Table 1: Mean Analysis of Teachers' Related Factors that Affect Acquisition of Practical Skills by EIMW Students**

S/N	Item	TEACHER n=36		ADMINISTRATOR n=24		G	Remark
		Mean	SD	Mean	SD		
1.	Use of inappropriate methods of teaching Practical	3.61	0.58	3.60	0.56	3.48	Agreed
2.	Inappropriate teaching Strategies	2.78	0.50	3.18	0.61	2.95	Disagreed
3.	Absence of consumable materials for practical skills training	3.33	0.10	3.32	0.91	3.22	Agreed
4.	Teacher often mislead students on career choice	2.06	1.45	2.64	0.24	2.45	Disagreed
5.	Educational level of teachers affects practical skills acquisition	3.17	0.69	0.55	0.51	3.29	Agreed
6.	Professionalism affects practical skills of teachers	3.44	0.78	3.36	0.47	3.34	Agreed
7.	Knowledge of practical skills of teachers affects students' acquisition of practical skills	3.89	0.52	3.68	0.01	3.34	Agreed
8.	Academic work load of teachers affects students' acquisition of practical Skills	3.88	0.08	3.82	0.93	3.86	Agreed
9.	Workshop work load of teachers affect students' acquisition of practical Skills	3.72	1.56	4.14	0.22	3.84	Agreed
10.	Poor remuneration of teachers affects students' acquisition of practical Skills	4.00	0.70	3.82	0.51	3.81	Agreed
11.	Lack of education of teachers affect students' acquisition of practical Skills	3.83	0.52	3.22	0.09	3.31	Agreed
12.	Lack of teaching interest in teachers affect students' acquisition of practical Skills	3.67	1.44	4.18	0.25	3.86	Agreed
13.	Attitude of school administrators towards practical skills training affect teachers' morals in impacting practical skills to students	3.16	0.36	3.45	0.70	3.26	Agreed
<b>Grade Mean</b>		<b>3.43</b>	<b>0.17</b>	<b>3.30</b>	<b>0.46</b>	<b>3.38</b>	<b>Agreed</b>

Key: = mean;  $G$ = Grand Mean; SD = Standard Deviation;  $SD_G$ = Grand Standard Deviation;  $n$ = sample of the group;  $N$ = sample size

The results in table 1 presents the mean opinion of teachers and school administrators on factors that affect acquisition of practical skills of students in EIMW in Government and science technical colleges in Gombe State. The result indicated that all items presented on related factors that affect acquisition of practical skills of

students in EIMW were agreed by the respondents with the exceptions of items 2 and 4 which have grand mean score of 2.95 and 2.45, and standard deviation of 0.38 and 0.60 respectively. The mean of these items were below the cut-off point of 3.0 While the standard deviation of these items signified that the mean responses of the groups are

closely tied. This means that these two items are not teachers' related factors that affects acquisition of practical skills of students in EIMW in Government science and technical colleges in Gombe State. While, the remaining 11 items were agreed upon as their mean and grand mean scores were above the cut-off point. The score of these 11 items

were within the mean of 3.22 and 3.86. Moreover, the grand mean of the whole items was 3.38 and 0.44 standard deviation. The grand mean and the standard deviation indicated the level of agreement and how close their opinions were to one another.

### Research Question 2

What are the job aspiration related factors that affect EIMW students' practical skills acquisition in Government Science and Technical Colleges of Gombe State?

**Table 2: Mean Analysis on the Effect of Students' Job Aspiration on Practical Skills Acquisition by EIMW Students**

S/N	Item	TEACHERADMINISTRATOR N=60				G	Remark
		n=36		n=24			
		Mean	SD	Mean	SD		
1.	Lack of parental motivation affects students' practical skills acquisition	2.17	1.12	2.73	0.33	2.59	Disagreed
2.	Lackeffective student practical skills acquisition	2.67	0.12	2.68	0.88	2.62	Disagreed
3.	Products of EIMW are not gainfully employed due to lack of practical skills	2.22	0.03	2.18	0.97	2.22	Disagreed
4.	Products of EIMW are less productive in the area of their specialization in the society	2.11	0.11	2.09	0.90	2.16	Disagreed
5.	Products of EIMW do not gain admission into higher institutions of learning after the acquisition of practical skills	1.78	0.35	2.41	0.11	2.31	Disagreed
	<b>Grand</b>	<b>2.19</b>	<b>0.35</b>	<b>2.42</b>	<b>0.77</b>	<b>2.32</b>	<b>Disagreed</b>

Key: = mean;  $G$ = Grand Mean; SD = Standard Deviation;  $SD_G$ = Grand Standard Deviation; n= sample of the group; N= sample size

The result in table 2 presents the mean perception of school administrators, EIMW

teachers on factors that affects students.' job aspiration on practical skills acquisition. The

result indicated that all items presented were disagreed by the respondents as their mean and grand mean scores were below the cut-off point of 3.00. Hence, the grand mean and standard deviation on the items were 2.32 and 0.87 respectively. It follows that students' job aspiration does not have effect on the practical skills acquisition. This finding was justified with outcome of the analysis (RG

2.32, SDG 0.87) and how closer the mean of the group is to each other.

**Hypothesis 1**

There is no significant difference in the mean response of school administrators, and EIMW teachers on teachers' related factors that affect acquisition of practical skills in EIMW by students.

**Table 3: Analysis on Teachers' Related Factors that affect Teaching of Practical Skills**

Groups	N	Mean	SD	Df	t-value	P-value
Administrator	24	3.30	0.46	58	0.268	0.58
Teacher	36	3.43	0.17			

**p=0.58 >0.05 the null hypothesis is accepted**

The outcome of the above table indicated that P = 0.58. Since P-value is greater than 0.05, the null hypothesis was therefore accepted. This followed that the mean response of the administrators and teachers are significantly the same at 0.05 level of significance. In other words, the group mean opinion with regard to teachers'

related factors that affect teaching of practical skills to EIMW students were not different.

**Hypothesis 2**

There is no significant difference in the responses of school administrators, EIMW teachers and students on the effect of students' job aspiration on the acquisition of practical skills by EIMW students.

**Table 4: Analysis on effect of students' job aspiration on practical skills acquisition**

Groups	N	Mean	SD	Df	t-value	P-value
Administrator	24	2.42	0.77	58	0.318	0.82
Teacher	36	2.19	0.35			

**p=0.82 >0.05 the null hypothesis is accepted**

The analysis of variance presented on table 4 above indicated that P = 0.82. Thus, the null hypothesis was therefore accepted since P-value is greater than 0.05. This inferred that the mean response of the administrators and teachers are significantly the same at 0.05 level of significance. Meaning that the mean opinion of the administrators and teachers on the effect of students' job aspiration on the acquisition of practical skills by EIMW students are statistically the same.

**Findings of the Study**

The findings of this study emerged from the analysis of the research questions and testing of the hypotheses at 0.05 level of significance. The findings of this study were as follows:

1. Lack of materials in the workshops affect practical skills acquisition.
2. Poor learning environment affects practical skills acquisition.
3. Student's aspiration does not affect practical skills acquisitions.

4. There is no significant difference in the mean response of school administrators, EIMW teachers and students' on student's related factors that affect acquisition of practical skills by EIMW students.
5. There is no significant difference in the mean response of the perception of the school administrators, EIMW teachers and students on the effect of socioeconomic background of students on the acquisition of practical skills by EIMW students.

### **Discussion of Findings**

The discussion of finding follows the manner in which the research questions and null hypotheses were presented. Research questions one identify the Teachers' related factors that affect acquisition of practical skills to EIMW students. In this regard, the findings of the study revealed that lack of teachers' interest in teaching affects students' acquisition of practical skills, indicated on table 1 with grand mean responds of 3.86 which is above the cut-up point of 3.00. This showed that teachers' related factors affect acquisition of practical skills to EIMW students in GSTCs of Gombe State. The findings of this study was in consonant with Jimoh (1997), Dahiru (2006) and Mbaga (2011) who affirmed the are factors associated with teachers that served as a major hindrance to the acquisition of practical skills Technical colleges across Nigeria. Similar viewed was held by Diraso (1997) who stressed lack of teachers' skills affect students in great dimension. This factors weakened teachers' morals, affects the effectiveness and consequently affects students' academic performance.

Research question two which sought the mean perception of school administrators, technical teachers on the effect of job aspiration on practical skills acquisition by EIMW students. The finding showed that students' aspirations does not affects practical skills acquisitions. The grand mean of the respondents was 2.32. The grand mean of the group was below the cut-up point of 3.00.

The study confirmed that the perception of school administrators, technical teachers and students on carrier aspiration of the students' have effect on practical skills acquisition. The finding of this study is similar with the study conducted by Shumba and Naong (2012), who noted that aspirations are wishes and does not necessary affects practical skills acquisition. Similarly, Udoukpong, Emah and Umoren (2012) also found that aspirations may be a driving force for achieving greater success, although it lowers the morals, but it does not affect skills acquisitions.

With respect to null hypothesis one, the study revealed that here is no significant difference in the mean response of administrators, EIMW teachers and students on teachers' related factors that affect acquisition of practical skills in EIMW by students. That there was a significant of no difference in the mean of the groups at 0.05 level of significance,  $F(2, 177) = 0.86, P = 0.43$ . Thus, the null hypothesis was upheld. In other words, it means that school administrators, technical teachers and students shared similar views on teachers' related factors that affect teaching of practical skills to EIMW students. Mbaga (2011), Dahiru (2006), Jimoh (1997) and Diraso, (1997) found similar results in their respective studies.

Furthermore, the outcome of the null hypothesis two was also showed the probability of no significance different ( $F(2, 177) = 0.20, P = 0.82$ ). With the probability value of 0.82 which is greater than the significant value of 0.05, the null hypothesis was accepted. Hence, there is no significant difference in the mean of the groups. This means administrators, technical teachers and students held same perceptions on students' job aspiration on the acquisition of practical skills in EIMW.

This study backed up the study conducted by Shumba and Naong (2012); Udoukpong, Emah and Umoren (2012) who in their different studies found out that students' job aspiration has effects on the acquisition of practical skills.

## Conclusion

In conclusion, the outcome of this study revealed that there are certain factors that affect acquisition of practical skills by students of EIMW in GSTCs of Gombe State. These factors include lack of teachers' interest in teaching, lack of materials in the workshops, poor learning environment and student's aspiration Chukwuemeka (2013). Thus, factors that affect acquisition of practical skills need to be given due considerations in implementing curriculum of technical education.

## Recommendations

Considering the findings of this study, the following recommendations were made:

1. There should be continuous training and re-training of EIMW teachers who should be able equip technical college graduates with the skills needed in the industries and/to be self-reliant and enterprising.
2. Students should be properly guided and mentored by availing them opportunities to interact with industry experts while pursuing their carrier aspirations.
3. Encourage students centered teaching methods with adequate teaching materials and equipment.
4. Gombe State government should equip and upgrade technical colleges with modern tools and equipment that suits the modern day industrial needs.

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