

Availability and Utilization of Teachers in General Metal Work in Technical Colleges in South-South, Nigeria

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Abstract

The study investigated availability and utilization of teachers in General Metalwork in technical colleges in South South, Nigeria. The study was guided by four research questions and two hypothesis. The hypothesis was formulated and tested at .05 level of significance. Correlation research design was adopted for the study. The population of the study was 219 respondents which comprised 45 General Metalwork teachers, and 174 students from the six states in South South, Nigeria. In view of the fact that the population of the study was a manageable size, the researcher used all the teachers and students for the study. The instruments used for data collection were: i. a checklist titled “checklist for General Metalwork Teachers (CGMWT) and ii. General Metalwork Achievement Test (GMWAT). The test-retest was used to establish the reliability of the General Metalwork Achievement Test. Person Product Moment Correlation Statistics and Multiple Linear regression analysis was used to analysis the hypothesis tested at an alpha level of .05 significance. Percentages were used to answer research question. The research question and the checklists were also analyzed using simple percentages. The results from the study reveal amongst others that General Metalwork teachers are at moderate level but at variance with the NBTE benchmark. Based on these findings, it was recommended that Government should employ more teachers in the field of General Metalwork in technical colleges in South South, Nigeria.

Keywords: Availability, Utilization, Teachers, General Metalwork.

Introduction

Education brings about perceptible and positive changes in individuals. This can be successfully achieved through the acquisition of appropriate skills and cognitive abilities, including a high level of competence. For this to occur, availability and utilization of human resources are of utmost importance.

Utilization of resources in every educational institution is as paramount as the attainment of goals and objectives. Apparently, schools with suitable, complete and appropriate resources may not utilize them efficiently and effectively. As a consequence, such schools fail to raise the level of students' performance. On the other hand, schools with limited resources may utilize the little they have efficiently and this may boost learning, therefore students should be able to maximize and utilize the available resources so as to adequately attain educational goals. Utilization of available resources is more paramount than the quantity. In other words, the significance of these resources does not necessarily rest on availability; rather what is more appreciable is the ability for teachers, workshop attendants and students to utilize the already accessible resources so as to attain the necessary academic content.

Therefore, stakeholders should be interested in the proper utilization of the available human resources especially for programmes aimed at inculcating skills, values and knowledge in the students. Technical, Vocational Education and Training (TVET) is a type of education that provides the skills, values, knowledge necessary for self-sustainability and reliance, and empowers the recipients and assures the technological and scientific development of the country. TVET is all about providing opportunities for exposure of clients to skills, values, creative minds undertakings and attitudes required to practice an occupation for the benefit of the individual, the society and the entire nation. It is a type of education tailored towards the training of individuals for self-reliance, productivity and societal development.

TVET prompted a total overhaul of the educational system in Nigeria from the inherited legacy of colonial education. With this overhaul, vocational education became part of the secondary education in Nigeria at the senior secondary school (SSS) level and at the technical college level. Vocational Education is education at the technical college level in Nigeria (Federal Republic of Nigeria (FRN), (2014). Uwameiye (2010) stated that vocational education prepares youths for employment in industries, commerce and other enterprises by exposing them to experiences that provide manipulative, cognitive and altitudinal skills that make them qualify for it. Vocational education also provides experiences for adults who require skills in different occupations. Therefore, the aim of vocational education is training for gainful employment and retraining for progress within the occupation. Uwameiye (2010) added that in vocational

education, emphasis is placed on exposing recipients to experiences of the real world of works and the domains of skills which are manipulative (psychomotor), informational (cognitive) and attitudinal (affective). These three domains of skill acquisition are important for the success of individuals in any job situation.

Amongst the various programmes undertaken for exposing recipients into vocational education to acquire these skills, is General Metalwork. General Metalwork as a subject offered in technical colleges in Nigeria. General Metalwork is designed to produce competent craftsmen and women in various metal work occupations. General Metalwork within the context of this study is the process of working with metals to create individual parts, assemblies or large-scale structures. It therefore includes a corresponding wide range of skills, processes and tools. Metal working is a science of art, industry and trade which can be categorized as forming, cutting or joining processes. General Metalwork is also the art of studying different metals, developing skills and talents in using the metals to form different objects or articles. Jadas (2010) stated that metalwork is a discipline aimed at training students on the general properties and use of metal in order to help them in materials selection for a particular job; train them on how to differentiate the techniques and approaches to a specific work and teach them how to utilize the safety rules and regulations in the workshop.

Human resources exist within people and consist of a person's potential benefits as well as current attributes; which include: knowledge, talent, skills, energy, education and any other characteristics which require affective, cognitive or psychomotor abilities. Human resources in General Metalwork in technical colleges refers to teaching and non-teaching staff which can be principals (school/college administrator), technical teachers, workshop attendants, artisans, cleaners and other members of staff who are directly or indirectly responsible to mould, improve, instill creative abilities, aptitude, values and commitment regarding the students involved in General Metalwork curricular. Thus, General Metalwork personnel are indispensable human resources that can utilize the available material resources to implement the proposed curriculum in technical colleges.

The level of vocational education programme in technical colleges is greatly dependent on the degree of utilization of adequate available resources for effective teaching and learning. Utilization within the context of this study refers to the rate or how often equipment, machines, tools and other instructional materials are put into use or services by teachers and students of General Metalwork in technical colleges. Utilization of these resources depends largely on their availability in technical colleges; where the resources are available and adequate and are not properly utilized or put into proper use by the teachers, there may be a situation of underutilization

of resources. Availability is also a state of making provision for a satisfactory standard requirement in terms of teaching resources; both human and material to enhance effective instructional activity in General Metalwork subjects (Onyejiemezie, 2012). No effective or meaningful teaching and learning will take place in a situation where resources are not adequately available.

Availability of resources in an institution like technical colleges; where practicality is most emphasized will go a long way in achieving specific goals of vocational education. Where resources are available, but the teachers and all those involved in managing the resources are not able to utilize them in teaching and learning process can have great consequences on the outcome of the programme. National Board for Technical Education (NBTE) (2014) stated that for a programme to achieve its objectives, resources for teaching various courses must be employed. Therefore, the programme of vocational education in technical colleges is possible through the effective combination and utilization of both human and material resources.

Therefore, there is need for an investigation into the level of utilization and state of availability of human resources in technical colleges in south-south, Nigeria and it is against this background that this study sought to appraised resource availability, utilization and their relationship to students' academic performance in General Metalwork in technical colleges in south-south, Nigeria.

Statement of the Problem

In a developing country like Nigeria where there is emphasis on self-reliance, there is need for manpower development and production of goods/services. Technological growth is therefore necessary if the country is to develop and compete with other developing countries technologically. It becomes imperative for General Metalwork students to acquire the needed skills and knowledge for technological advancement of the nation and for better academic performance in various vocational subjects offered in technical colleges in final examinations. Unfortunately, Aina (2012) stated that the quality and quantity of teachers in technical schools have contributed immensely to the high failure rates being experienced in the programmes run by NABTEB examinations.

In a survey of academic performance of General Metalwork students from technical colleges in South South, Nigeria in the National Business and Technical Examination Board (NABTEB) examinations from 2013 – 2018 as shown in Appendix I, reveals poor academic performance of students, The survey reveals that 20.06% pass, 64.39% failure and 15.25% absent in 2013, 24.64% pass, 59.84% failure and 15.49% absent in 2014, 22.79% pass, 64.02% failure and 13.15% absent in 2015, 31.94% pass, 57.36% failure and 10.65% absent in 2016, 5.48% pass,

80.72% failure and 13.76% absent in 2017 and 12.74% pass, 70.57% failure and 16.66% absent in 2018. If this trend of performance continues, General Metalwork students may find it difficult to pass the final examinations at ANTC level or proceed to the tertiary institutions for further studies. Could these poor performances be attributed to inadequate provision of human resources for effective teaching and learning? Also, could these poor performances be as a result of poor utilization of resources by the teachers and students offering General Metalwork in technical colleges in South South, Nigeria?

Owoeye and Yara (2014) also emphasized that availability, adequacy and utilization of human and material resources promotes effective teaching and learning activities in technical colleges while their unavailability, inadequacy and underutilization may affect the academic performance of the learner negatively. It is worrisome that General Metalwork students do not seem to have the practical knowledge needed for the world of work in industries, which is the problem of this study.

Research Questions

The following research questions were raised to guide the study:

1. what is the level of availability of teachers in General Metalwork in technical colleges in south-south, Nigeria?
2. what is the level of utilization of teachers in General Metalwork in technical colleges in south-south, Nigeria?
3. What is the relationship between teachers' availability and academic performance of students in General Metalwork in technical colleges in south-south, Nigeria?
4. What is the relationship between teachers' utilization and academic performance of students in General Metalwork in technical colleges in south-south, Nigeria?

Hypotheses

The following null hypothesis was formulated and tested at .05 level of significance to guide the study:

Ho₁: there is no significant relationship between teachers' availability and academic performance of students in General Metalwork in technical colleges in south-south, Nigeria.

Ho₂: there is no significant relationship between teachers' utilization and academic performance of students in General Metalwork in technical colleges in south-south, Nigeria.

Scope of the Study

The study covered the availability and utilization of teachers in General Metalwork in technical colleges in south-south, Nigeria. The variables considerations in the study are availability and utilization of General Metalwork teachers in technical colleges in south-south, Nigeria.

Methodology

The correlation research design was employed for this study. The survey design was considered appropriate because it is aimed at collecting data from General Metalwork teachers on the human resource situations in technical colleges in south-south, Nigeria. According to Nworgu (2015), descriptive survey design is most preferable when the subject of an investigation centres on individual opinions, views, attitude and perception purely on personal basis. The target population for the study was 219 respondents made up of 45 General Metalwork teachers and 174 Vocational II students offering General Metalwork in the 27 technical colleges in south-south, Nigeria. However, due to small size of the population, there was no sampling. Instrument for the study was a checklist and an achievement test. Checklist for General Metalwork Teachers (CGMWT) which was obtained from National Board for Technical Education are valid because they were constructed in line with the benchmark set by NBTE. The General Metalwork Achievement Test (GMWAT) was administered to 10 VOC II students offering General Metalwork in Government Science and Technical College, Owo, Ondo State, South-West, Nigeria at two different occasions with an interval of two weeks. The test-retest method was used to establish the reliability of the General Metalwork achievement test. The scores received from the administration were subjected to Pearson Product Moment Correlation Coefficient. A reliability co-efficient of .75 was obtained which shows that the measure of consistency is high and the instrument is reliable. Pearson Product Moment Correlation Statistics and multiple linear regression analysis were used to analyse the null hypotheses and test/predict at .05 level of significance. Percentages were used to answer the research questions and the checklist was analyzed using simple percentages.

Results

The data obtained from the study were used to answer the research questions raised.

Research Question 1: What is the level of availability and utilization of teachers in General Metalwork in technical colleges in south-south, Nigeria?

Table 1: Percentage Availability and Utilization of Teachers

SN	Name of School	Number Required	Number Available	Availability Percent (Adequacy)	Number Utilized	Utilization Percent
1	School A	3	2	66.67	2	100.00
2	School B	-	-	-	-	-
3	School C	3	3	100.00	2	66.67
4	School D	3	4	133.33	2	50.00
5	School E	3	2	66.67	2	100.00
6	School F	3	1	33.33	1	100.00
7	School G	3	2	66.67	2	100.00
8	School H	3	3	100.00	3	100.00
9	School I	3	1	33.33	1	100.00
10	School J	3	1	33.33	1	100.00
11	School K	3	2	66.67	2	100.00
12	School L	3	1	33.33	1	100.00
13	School M	3	1	33.33	1	100.00
14	School N	3	1	33.33	1	100.00
15	School O	3	1	33.33	1	100.00
16	School P	3	1	33.33	1	100.00
17	School Q	3	2	66.67	1	50.00
18	School R	3	1	33.33	1	100.00
19	School S	3	1	33.33	1	100.00
20	School T	3	2	66.67	1	50.00
21	School U	3	2	66.67	1	50.00
22	School V	3	1	33.33	1	100.00
23	School W	3	2	66.67	1	50.00
24	School X	3	2	66.67	1	50.00
25	School Y	3	2	66.67	1	50.00
26	School Z	3	1	33.33	1	100.00
27	School AA	3	2	66.67	1	50.00
28	School AB	3	1	33.33	1	100.00
Total		81	45	55.56	35	77.78

Key: 0 %– 33.33% = Low; 33.34% – 66.67% = Moderate; 66.68% – 100% = High

Table 1 shows that out of the 28 technical colleges in south-south, Nigeria, 27 of them offer General Metalwork with the percentage availability of teachers ranging from 33.33% to 133.33% (the 133.33% is as a result of a school having more than the required three teachers per school). Of the 27 schools, 13 of them had 1 teacher each (33.33% availability); 11 of them had 2 teachers each (66.67% availability); 2 of them had the required 3 teachers each (100.00% availability); while 1 of the schools had 4 teachers, a number more than the required (133.33% availability). The table also indicates that out of the 81 General Metalwork teachers required according to NBTE benchmark, only 45 (55.56%) are available. The mean percentage availability is 55.56% meaning therefore that the teacher availability in technical colleges in south-south, Nigeria is at a moderate level, but inadequate with the benchmark of NBTE of 3 three instructors per trade subject.

Table 1 also shows that in the 27 Technical colleges offering General Metalwork the percentage utilization of teachers, ranges from 33.33% to 100.00%. Of the 27 schools, eight of the schools functioned at 50% utilization of available teachers; one of them functioned at 66.67% utilization of available teachers; and the remaining 18 schools functioned at 100% utilization of available teachers. The mean percentage utilization of available teachers is 77.78%, meaning therefore that the utilization of available teachers in technical colleges in south-south, Nigeria is at a high level.

Hypothesis 1: There is no significant relationship between teachers' availability and academic performance of students in General Metalwork in technical colleges in south-south, Nigeria.

Table 2: Pearson's r Correlation between Teacher Availability and Students Academic Performance

Variable	N	Pearson' s r	Sig. (2-tailed)	Remark
Teacher Availability				
	27	0.257	0.196	Reject Ho
Academic Performance				

$\alpha = 0.05$

Table 2 shows a calculated Pearson's r value of .257 and a p value of .196. Testing at an alpha value level of .05, the r value is greater than p value, so the null hypothesis which states that there is no significant relationship between teachers' availability and academic performance of students in General Metalwork in Technical Colleges in south-south, Nigeria is rejected. Consequently, there is significant relationship between teachers' availability and academic performance of students in General Metalwork in Technical Colleges in south-south, Nigeria is rejected. Consequently, there is significant relationship between teachers' availability and

academic performance of students in General Metalwork in technical colleges in south-south, Nigeria.

Hypothesis 2: There is no significant relationship between teachers' utilization and academic performance of students in General Metalwork in technical colleges in south-south, Nigeria.

Table 3: Pearson's r Correlation between Teacher Utilization and Students' Academic Performance

Variable	N	Pearson' s r	Sig. (2-tailed)	Remark
Teacher Utilization				
	27	.635	.000	Reject Ho
Academic Performance				

$\alpha = .05$

Table 3 shows a calculated Pearson's r value of .635 and a p value of .000. Testing at an alpha level of .05, the r value is greater than p value, so the null hypothesis which states that there is no significant relationship between teachers' utilization and academic performance of students in General Metalwork in technical colleges in south-south, Nigeria is rejected. Consequently, there is significant relationship between teachers' utilization and academic performance of students in General Metalwork in technical colleges in south-south, Nigeria.

Discussion

The findings from the study show that there is significant relationship between teachers' availability and academic performance of students in General Metalwork in technical colleges in South-South, Nigeria. This finding is in line with the findings of Adeniji (2017) who revealed that both the quality and quantity of teachers related significantly in Ogun State of Nigeria. Okemakinde, Adedeji and Ssempebwa (2019) indicated in a study that there is relationship between the availability and utilization of resources and academic performance in the colleges studied; adding that increasing the resources availed to the colleges by 100% would enhance academic performance.

The findings from the study also show that there is significant relationship between teachers' utilization and academic performance of students in General Metalwork in technical colleges in South-South, Nigeria. These findings is in line with the findings of Akiri and Ugborugbo (2018) who found out that there was a significant relationship between teachers' gender and students' academic achievement and Yale and Wanjohi (2011) who found that that teachers' experience and educational qualifications were the prime predictors of students' academic achievement. Also, Etsy (2005) study in Ghana found out that the teacher factors that

significantly contributed to low academic achievement were incidences of lateness of school, incidences of absenteeism and inability to complete the syllabi.

Conclusion

Based on the findings of the study, the availability and utilization of General Metalwork teachers in technical colleges in south-south, Nigeria are not encouraging. From the data collected through the instruments, there was inadequate number of General Metalwork teachers and those available were poorly utilized for the teaching of General Metalwork.

Therefore, the Government, policy makers and other stakeholders in education sector should implement the suggestions highlighted below so as to improve the students' academic performance in General Metalwork in technical colleges in south-south, Nigeria.

Recommendations

Based on the findings of this study, the researcher made the following recommendations:

- i. The Governments in South South Nigeria should employ more teachers to teach General Metalwork in technical colleges in South-South, Nigeria;
- ii. Governments should always organize seminars, workshops for General Metalwork teachers in order to be updated on the current use of instructional materials such as machines, tools, equipment so as to ensure proper utilization of the available material resources.
- iii. Well-meaning individuals and private companies, Parent Teachers Association (PTA) should support governments in their effort to improve on the technical colleges by helping providing incentives to teachers for encouragement.

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