



Evaluation of Performance of N.C.E. (Technical) Graduates of Federal College Of Education (Technical) Potiskum, in Teaching Basic Technology in North-Eastern, Nigeria

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ABSTRACT

This study was Designed to Evaluate the performance of N.C.E. (Technical) graduates of federal college of education (Technical) Potiskum, in Teaching basic Technology in north-eastern, Nigeria. The study adopted survey research design. The survey design seems to be suitable and appropriate, because it involves collection of data through a questionnaire from a representative sample of the population. All the Technical Education Graduates of FCE (T) Potiskum that graduated between 2010 and 2016 who are teaching Basic Technology in Yobe state. A breakdown of the total number of Technical Education graduates of FCE (T), Potiskum between 2010 and 2016 shows that out of the 844 graduates, 602 are residing within Yobe State; these represents 71 percent of the total graduates, out of this number 420 were teaching with the Yobe state government. The instrument used was a structured questionnaire to elicit information from the respondents. The questionnaire was termed Technical Education Graduates 2006-2010 Follow-up Questionnaire (TEGFUG) is structured into four-point response category. Data obtained from the respondents were analysed using computer programme of statistical package for social sciences (SPSS). Mean was used to answer the research question, to Uzoagulu (2011), when the response category has four-level ranging from 4 to 1 the mean is 2.50. Hence, any item with a mean value of 2.50 and above was accepted while item with a mean value less than 2.50 was rejected. With this study therefore, any item with a value of 2.50 or above was considered effective while item less than 2.50 was considered ineffective. The study revealed that the performance level of TE Graduates in the knowledge and demonstration of technical subjects is generally effective, except in some few areas of the subject matter which need improvement. The research recommended that, technical education trainers should ensure adequate coverage of course outline of their courses at every semester. Skipping some topics can lead to what was revealed in the findings of this study, that technical teacher training should emphasize the use of instructional materials during training to inculcate to the students the habit of using instructional materials. And Adequate instructional materials should be provided during training of technical teachers and the skills of improvisation should be encouraged.

Keywords: Evaluation, Performance, Basic Technology, N.C.E Technical Graduates.

INTRODUCTION

The aim of Education is to make an individual to become a better citizen, relevant to his host environment. Technical education as a form of education has that purpose. It is an education which is

directed towards developing the learner to become productive in a self or paid employment. Its goals as stated by the Federal Government of Nigeria (FGN) in the national policy on education (2004) are:

1. To provide trained manpower in applied sciences, technology and business particularly at craft, advanced craft and technical levels;
2. Provide technical knowledge and vocational skills necessary for agricultural, commercial and economic development; and
3. To provide people who can apply scientific knowledge to the improvement and the solution of environmental problem for the use and convenience of man;
4. To give an introduction to professional studies in engineering and other technologies;

In pursuance of the above goals the federal government of Nigeria (2004) has restructured and divided secondary education into junior and senior secondary schools (JSS and SSS); where in each segment technical subject is incorporated. Introductory technology (Basic Technology) is a core course in the JSS curriculum while technical subjects like metalwork, woodwork, electrical/electronic, building technology etc as electives in the SSS curriculum. This according to Bulus (2010) brought about the then 6-3-3-4 system of education. This is the type of education wherein the recipient of the education would spend six years in the primary school, three years in the JSS, three years in the SSS and four years in the tertiary institutions. The history of 6-3-3-4 system was dated back to 8th September, 1969 during the (International) Literacy Day when the then commissioner for Education Mr Wenike Briggs inaugurated a conference which formulated the basis leading to the 6-3-3-4 programme (Babafemi, 2007).

For the implementation of these programme the Federal Government of Nigeria established Colleges of Education (Technical) in the 1980s for the training of Nigerians of NCE (Technical) to teach this subject at JSS level. The objectives of NCE (Technical) according to the National Commission for Colleges of Education (NCCE), (2012) shall be:

1. To produce qualified technical teacher and practitioners of technology capable of teaching introductory (Basic) technology in the JSS;
2. To produce NCE (Technical) teachers who would be able to inculcate scientific and technological attitude and values into the society;
3. To produce qualified technical teachers motivated to start to start the so much desired revolution of technological development right from the Nigerian schools ; and
4. To produce technical teachers so as to qualify them for a POST-NCE degree programme in technical education (NCCE, 2012).

Based on the stated objectives of NCE (Technical) programme, it is clear that graduates of the programme must possess adequate technological and professional competencies, if they must performed effectively.

Evaluation is a systematic analysis of completed or on-going programme or activities to ascertain their effectiveness and efficiency. Performance evaluation can be defined as a formal determination of an individual's job-related actions and their outcomes within a particular position or setting. Armstrong (2006) described the role of performance appraisal as a tool for looking forward to what need to be done by people in the organization in order to achieve the purpose of the job to meet new challenges. The methods include determining the type of data to be collected and evaluated in the appraisal, the forms and frequencies of communication that took place between supervisors and their employees; and the various types of tools used to measure performance (Froydis, Einar and Trud, 2011). Performance appraisal is described as a search for better, more accurate, more cost-effective communication techniques for measuring job performance and job satisfaction. Performance appraisal is considered to be an important technique for improving the performance of an organization. From the foregoing definitions it can be summarised that performance evaluation is concerned with determining the effectiveness or efficiency of personnel in relation to a programme or organisation.

The NCE (Technical) programme is clear in its objectives, contents and teaching methods, hence the need to take a close look at its implementers, determine their quality and suggest appropriate policy decisions. It is against this background therefore, that the present study will attempt to follow-up NCE (Technical) graduate teachers from Federal College of Education (Technical), Potiskum who are teaching Basic

Technology subject in Junior Secondary Schools in Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe states, to evaluate their effectiveness or otherwise in relation to their job performances.

Problem Statement/Justification

Based on the objectives of Technical Education as outlined above, a technical teacher must be properly trained and equipped. If inadequately, improperly trained technical teachers are employed to teach in the Junior Secondary Schools are allowed to continue unchecked, it then means that the dream of achieving the objectives of technical education will not be a reality. Technical teacher training programme is well conceived and currently being executed in most of the technology based higher institutions in the country based on outstanding admission processes, proper curriculum implementation and evaluation, it is hoped to be yielding expected results. The level of teaching competencies of graduates of this programme specifically NCE (Technical) graduates of Federal College of Education (Technical), Potiskum has however not been determined before now. Ascertaining the level of competency of NCE (Technical) graduates of Federal College of Education (Technical), Potiskum in Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe states in relation to delivering the content of the curriculum to their students is therefore the concern for this study.

Objectives/Purpose of the Study

The objectives of the study are:

1. To determine how effective are the Technical Education Graduates of FCE(T) Potiskum in demonstrating the knowledge of Building Technology in their teaching activities;
2. To determine how effective are the Technical Education Graduates of FCE(T) Potiskum in demonstrating the knowledge of Electrical/Electronic in their teaching activities;
3. To determine how effective the Technical Education Graduates of FCE(T) Potiskum are in demonstrating the knowledge of Metalwork Technology during their teaching activities;

Research Questions

1. How effective the Technical Education Graduates of FCE (T) Potiskum in demonstrating the knowledge of Building Technology during their teaching activities?
2. How effective the Technical Education Graduates of FCE (T) Potiskum in demonstrating the knowledge of Electrical/Electronic during their teaching activities?
3. How effective the Technical Education Graduates of FCE (T) Potiskum in demonstrating the knowledge of Metalwork Technology during their teaching activities?

Significance of the Study

In education sector, Follow-up study provides significant feedback to stakeholders. If the effectiveness of Technical Education graduates of Federal College of Education (Technical), Potiskum in teaching Basic Technology are determined, and if the recommendations to be provided based on the findings of this study are implemented, then the N.C.C.E., which is the regulatory body of the curriculum of Colleges of Education in Nigeria will benefit by being informed about the aspect of curriculum that may require improvement. Teacher-trainers in Federal Colleges of Education (Technical), Potiskum will benefit by reviewing their performance and improve on their teaching method where necessary. Student teachers on the other hand will be better trained to become teachers who will use their hands and knowledge to influence their students to develop interest in technology. The findings will also help the Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe states' Ministries of Education to have authentic information on the quality of their of their Basic Technology Teachers from Federal College of education (Technical), Potiskum so as to make appropriate Policy decision on teacher recruitment.

Delimitation of the Study

The study will focused on the Professional competencies, Pedagogical competencies and the knowledge of general education components possessed by Basic Technology teachers from Federal college of education (Technical), potiskum between 2010 and 2015 that are currently teaching in Bauchi, Gombe, and Yobe states Junior Secondary Schools.

REVIEW OF RELATED LITERATURE

This chapter works pertinent to present the reviewed under the following sub-headings:

1. Programme Evaluation
2. Technical Teacher Education in Nigeria
3. Curriculum Components of Nigeria Certificate in Education (Technical)
4. Basic Technology Programme

Programme Evaluation; Programme evaluation in education refers to the formal process of reviewing or judging the desirability or effectiveness of educational process according to a laid down criteria. According to Okoro (2002) evaluation in education involve collection of data and the use of such data to assess the worth, effectiveness or quality of a programme or performance. The finding from evaluation is used to provide feedback so as to make a rational decision towards its improvement. Ajala (2002) considered evaluation as the process which includes research activities, the systematic testing of data, clarifying discrepancies between goals and objectives and a decision making functions. To the word of Steele (1970) programme evaluation is the systematic process of judging the worth, desirability or inadequacy of something according to definite criteria and purpose. The judgement is based upon a comparison between the data observed and the criteria standard. **Technical Teacher Education Programme in Nigeria;** Technical teacher education programme in Nigeria is an attempt made by government to produce qualitative teachers who teach technology in all levels in the educational sector. According to Bulus (2010) Technical teacher education programme is sum up on activities designed to improve the quality and productivity of teachers who will become skilful personnel to occupy both the public and private sectors for the nation's development. Technical teacher education programme in Nigeria is an attempt made by government to produce qualitative teachers who teach technology in all levels in the educational sector. The National Policy on Education, FGN (2013) outlined the following as major goals of teacher education:

- (a) To produce highly motivated, conscientious and efficient classroom teachers for all levels of our education system;
- (b) To encourage further the spirit of enquiry and creativity in teachers;
- (c) To help teachers to fit into social life of the community and the society at large and enhance their commitment to National goals;
- (d) To provide teachers with the intellectual and professional background adequate for their assignment and make them adaptable to changing situations;
- (e) The policy further suggested that all teachers in educational institutions shall be professionally trained, and also, N.C.E. shall be the minimum qualification for teaching profession.

The reason for training Technical Teacher is to provide teachers that are well groomed with enough skills, knowledge and potentials needed for technological advancement (Uwaifo & Uwaifo 2009). It is therefore necessary to give enough attention to the mode of training given to would be technical teachers, to ensure that the best is given to them and also to monitor the output of these teachers. The training of Technical Teachers is done at NCE, Bachelor of Education (Technical), Master's Degree or Doctorate Degree in Industrial Technology Education levels.

The Curriculum Components of Nigeria Certificate in Education (Technical) Programme

The Nigeria Certificate in Education is among the Teacher Education Programmes which is the minimum requirement for teaching profession as contain in the National Policy on Education (2013), is a programme of instruction which provides the necessary skills, attitude and knowledge to prospective teachers who would be able to teach in primary and junior secondary schools. According to NCCE (2012) the philosophy of NCE (Technical) is to provide Technical Teachers with the intellectual and professional background adequate for teaching technical subjects and to make them adaptable to any changing situation in technological development not only in the country but also in the world at large. The programme is meant for graduates of senior secondary schools and Technical Colleges who have interest, aptitude and attitude to join the teaching profession and also have satisfied the admission requirement. All students admitted in to the NCE (Technical) programme would offer all the courses in Technical

Education in the first and second year and student will choose an area of specialization in the third year from the following: -

Automobile, Building, Electrical/Electronic, Metalwork, Woodwork Technology (NCCE, 2012).

A student is required to go for an industrial attachment in a relevant Engineering firm for exposure to practical work experience. This will develop and encourage the ideals of technical education. The objectives of the Student Industrial Work Experience Scheme (SIWES) as outlined in the minimum standard for NCE (Technical) programme are:

1. To introduce the students to the industry.
2. To expose the students to the operation and use of industrial machinery.
3. To acquaint the student with the management structures of industrial organization and
4. To develop good work habits (NCCE 2012).

Basic Technology Programme; Technology has different facets and definitions; it may be defined as a product of human resource fullness. Uwaifor & Uwaifo (2009) defined technology as an activities deal with man's attempt to satisfy his wants by human action on physical objects. Similarly, Uwaifor & Edigin (2011) refers to technology as the use of product creativity, inventions and scientific research in the service of man. Hence, technology education can be defined as all man's activities, which enable him to acquire a practical skill dealing with, scientific, industrial, and commercial or even traditional methods and their user so that he may become a productive human being. Federal Government of Nigeria in 2007 made Basic Technology as a compulsory subject in the 9-years of Basic Education Programme. In pursuit of the objectives of Basic Technology, its curriculum covers the following nine (9) themes:

- i. You and Technology
2. Safety
3. Materials and Processing
- ii. Drawing Practice
- iii. Tools and Machines
- iv. Applied Electricity and Electronics
- v. Energy and Power
- vi. Maintenance
- vii. Building

The contents under each theme are made to reflect the basic nature of technology, that is, knowledge, skills, creativity and attitude. It is hoped that student's assessment would be based on these elements (FME 2007).

METHODOLOGY

Design of the Study

The study adopted survey research design. The survey design seems to be suitable and appropriate, because it involves collection of data through a questionnaire from a representative sample of the population.

Area of the Study

The study was carried out in North-East zone of Nigeria namely Admawa, Bauchi, Borno, Gombe, Taraba and Yobe states. The North East has geographical boundary of latitude 6.26° East and longitude 4.92° North of the equator with total area 103,639sq/m (World Atlas Map, 2010). The study will cover all the Junior Secondary Schools in these states

Population of the Study

The population for this study consisted of all the Technical Education Graduates of FCE (T) Potiskum that graduated between 2010 and 2016 who are teaching Basic Technology in Yobe state. A breakdown of the total number of Technical Education graduates of FCE (T), Potiskum between 2010 and 2016 shows that out of the 844 graduates, 602 are residing within Yobe state; these represents 71 percent of the total graduates (Table 1). Out of this number 420 were teaching with the Yobe state government (Table 2).

Table 1: NCE Technical Education Graduates of FCE (Technical) Graduates 2010-2016

Year of Graduation	Total No of Graduates	Number of Graduates Residing in Yobe State	Total no of Graduates Res. in other states	Percentage of Graduates Res. in Yobe State
2009/2010	119	76	43	63
2010/2011	106	78	28	74
2011/2012	100	80	20	80
2012/2013	110	77	33	70
2013/2014	130	91	39	70
2014/2015	143	102	41	71
2015/2016	136	98	38	72
TOTAL	844	602	242	71

Source: Academic Office, FCE (T), Potiskum (2019)

Table 2: School Distribution in Yobe State

S/N	Local Govt. Area	No of Junior Sec. Schools	No of Senior Sec. Schools
1.	Bade	11	4
2	Bursari	7	1
3	Damaturu	9	3
4	Fika	10	4
5	Fune	8	4
6	Geidam	7	2
7	Gujba	7	4
8	Gulani	6	2
9	Jakusko	7	2
10	Karasuwa	5	1
11	Machina	6	1
12	Nangere	8	3
13	Nguru	10	6
14	Potiskum	14	5
15	Tarmuwa	5	1
16	Yunusari	6	2
17	Yusufari	5	3
	Total	131	48

Source: Yobe State Ministry of Education, Damaturu (2019)

Sample and Sampling Technique

The Taro Yamane formula for a finite population was used to determine the sample size. The is given as: $n = N / (1 + N(e)^2)$.

Where:

n = Sample size

N = Finite Population

e = level of significance

1 = Unity (a constant) (Uzuagulu, 2011).

Substituting into the formula of Taro Yamane, 420 TE Graduates is the population of the study while, 0.05 is the level of significance proposed for data analysis. A sample of 204 representing 49% of the population was considered for the study.

Sampling Techniques

The sampling technique adopted was simple random sampling technique. This technique is appropriate because it makes all members have equal chances of being selected, going by the size of the population. Therefore, 204 TE Graduates were randomly selected from the 131 Junior Secondary Schools in the state.

A total of 131 Principals of all the junior Secondary Schools and 131 Heads of Departments of Basic Technology were used for the study. This number represented the whole sample. Therefore, there is no sampling in the case of principals and Heads of Departments.

Instrument for Data Collection

The instrument used was a structured questionnaire that was designed by the researchers to elicit information from the respondents. The questionnaire was termed Technical Education Graduates 2006-2010 Follow-up Questionnaire (TEGFUG) is structured into four-point response category of:

Very Effective	= 4 Points
Effective	=3 Points
Ineffective	= 2 Points
Very Ineffective	= 1 Point.

Validation of the Instrument

Two senior lecturers in the department of Technology Education, Modibbo Adama University, Yola and two chief lecturers in Technical education from FCE (T), Gombe and FCE (T), Potiskum were validated the TEGFUQ. These experts assess the instrument in relation to the curriculum contents of the NCE (Technical) Minimum standards for Technical Subjects. Their observations and corrections were used to modify the instrument.

Reliability of the Instrument

The Technical Education Graduates of FCE (T), Potiskum from 2010-2016 Follow-up Questionnaires (TEGFUQ) was trial tested using 15 TE Graduates in three Junior Secondary schools in Bauchi state in order to establish the reliability of the instrument. Even though the school is part of the population of the study, but the school and the students did not form part of the sample used. The 15 students were randomly sampled for the pilot test. Cronbach's Alpha was used to analyse the results obtained from the trial test and the reliability coefficient of 0.834 was obtained. This has indicated that the test instrument is reliable.

Data Collection

The data for the research was collected by the researchers using a structured follow-up questionnaire with the help of two research assistants that help in administering the instruments.

Data Analysis

Data obtained from the respondents were analysed using computer programme of statistical package for social sciences (SPSS).

Decision Rule

According to Uzoagulu (2011), when the response category has four-level ranging from 4 to 1 the mean is 2.50. Hence, any item with a mean value of 2.50 and above was accepted while item with a mean value less than 2.50 was rejected. With this study therefore, any item with a value of 2.50 or above was considered effective while item less than 2.50 was considered ineffective.

RESULTS AND DISCUSSION

The chapter presents the analysis of the data collected for this study using appropriate statistical tools. The data was analysed to answer the research questions and to test the hypotheses.

Research Question 1

How effective are the Technical Education Graduates of FCE(T) Potiskum in demonstrating the knowledge of Building Technology during their teaching activities?

Table 1: Mean responses of Technical Education Graduates, Principals and Heads of Department of Basic Technology on how effective Technical Education Graduates demonstrate knowledge of Building Technology in teaching.

Item No	Building Tech. competencies	TEG Mean N=204	Principal Mean N=131	HOD Mean N=131	Grand Mean	Remarks
1	Knowledge of building components like foundations, walls, floors and roofs	2.6814	3.1298	3.1374	2.9848	Effective
2	Demonstrate knowledge of building science and materials	2.7549	3.1221	3.1221	2.9997	Effective
3	Demonstrate knowledge of structural design in building	2.6618	3.0534	3.0763	2.9305	Effective
4	Knowledge of principles and methods of carrying out substructure construction for simple building project	2.6176	3.1069	3.0458	2.9234	Effective
5	Demonstrate the knowledge of land surveying, surveying, setting out and landscaping	2.5196	3.0763	3.0305	2.8755	Effective
6	Demonstrate an understanding of the difference between technical risk and risk to the public interest/public safety issues	2.3471	2.1195	3.0763	2.1803	Ineffective
7	Knowledge of stress, strain, shear force and bending moments	2.4804	2.2405	2.0611	2.2607	Ineffective
8	Carry out design and drawing of a building plan	2.4951	2.8168	3.0458	2.7859	Effective

Table 4 reveals that out of the 8 items on Building competencies TE Graduates were effective in 6. They were ineffective in items 6 and 7 which were Identifying risk areas, including causes of risks and their impacts and Knowledge of stress, strain, shear force and bending moments during their teaching. They were graded 2.1803 and 2.2607 respectively.

Research Question 3

How effective are the Technical Education Graduates of FCE(T) Potiskum in demonstrating the knowledge of Electrical/Electronic during their teaching activities?

Table 5: Mean responses of Technical Education Graduates, Principals and Heads of Department of Basic Technology on how effective Technical Education Graduates demonstrate knowledge of Electrical/Electronics in teaching.

Item No	Electrical/Electronic competencies	Technology	TEG Mean N=204	Principal Mean N=131	HOD Mean N=131	Grand Mean	Remarks
1	Ability to carry out weekly routine maintenance exercise for all electrical equipment		2.8873	3.0611	3.0763	3.0082	Effective
2	Repair of damaged electrical equipment parts		2.9608	3.0000	3.0458	3.0022	Effective
3	Ability to replaced worn out parts of electrical equipment		2.7549	2.8168	2.8313	2.8010	Effective
4	Use of electrical measuring instrument		2.2824	2.3531	2.3521	2.3292	Ineffective
5	Knowledge of Electrical symbols						
6	Ability to design a Circuit component		2.7157	2.9084	2.9618	2.8620	Effective
7	Electrical domestic Installation		2.7794	2.8931	2.8858	2.8528	Effective
8	Ability to install Electric motors	Ability	2.8333	2.8931	2.8931	2.8732	Effective
9	Ability to repair a faulty electronics set						
10	Fault detection in domestic Electrical wiring		2.3725	2.2121	2.4221	2.3556	Ineffective
			2.1912	2.6473	2.0722	2.4502	Ineffective
			2.7892	2.9180	3.0382	2.9151	Effective

Table 5 shows the knowledge of TE Graduates in Electrical/Electronic. The results show that the Graduates were effective in demonstrating 7 out of the 10 competencies itemised in their day-to-day teaching. They were ineffective in the knowledge of replacing worn parts of electrical equipment, Ability to install Electric motors and Ability to repair a faulty electronics set. They were rated 2.3292, 2.3556 and 2.4502 respectively.

Research Question 4

How effective are the Technical Education Graduates of FCE (T) Potiskum in demonstrating the knowledge of Metalwork Technology during their teaching activities?

Table 6: Mean responses of Technical Education Graduates, Principals and Heads of Department of Basic Technology on how effective Technical Education Graduates demonstrate knowledge of Metalwork Technology in teaching.

Item No	Metalwork Technology competencies	TEG Mean N204	Principal Mean N=131	HOD Mean N=131	Grand Mean	Remarks
1	Knowledge of welding equipment	3.0098	2.9084	3.0382	2.9855	Effective
2	Ability to carry out welding practical	3.0049	3.1374	2.7863	2.9762	Effective
3	Use of meal machine tools and equipment	2.8039	3.0763	3.1221	3.0008	Effective
	Ability to operate Lathe machine					
4	Ability to drill a hole with a drilling machine	2.5196	3.1832	3.1069	2.9366	Effective
5	Ability to operate Power Hacksaw	2.6176	3.0687	3.0763	2.9209	Effective
6	Use of casting tools and equipment	2.6667	3.0763	3.1985	2.9805	Effective
7	Use of metalwork work-holding devices	2.7647	3.0534	3.1679	2.9953	Effective
8	Ability to carry out maintenance of machine tools and equipment	2.8627	2.9695	3.1527	2.9950	Effective
9	Ability to develop complex sheet metal pattern	2.9804	2.8931	3.1221	2.9985	Effective
10	Machinability and Practical analysis of metal chips structures selecting relative	2.4902	3.0763	3.0763	2.8809	Effective
11	speeds for common steels	2.3411	2.5336	2.1431	2.3393	Ineffective
	Selecting appropriate cutting fluids for specific materials particularly for grinding operations					
12	Ability to apply all criteria and condition for selecting all carbide tipped tools and all raw materials tools	2.7157	3.0229	3.0305	2.9230	Effective
13	Ability to use gang drill machine to perform operations such as drilling, reaming, counter boring, hand tooling with the use of jigs and fixtures	2.3235	2.4542	2.4405	2.4061	Ineffective
14	Grinding different lathe tools with	2.9118	3.0763	2.8931	2.9604	Effective
15	different tool geometry	2.7696	.0458	3.0153	2.9435	Effective

Table 6 indicates the knowledge of metalwork technology acquired by TE Graduates effectively contributes to their professional teaching activities in thirteen (13) out of fifteen (15) questionnaire items. The highest grand mean being 3.008 that measured TE Graduates' Use of meal machine tools and equipment. Areas of weakness includes Machinability and Practical analysis of metal chips structures selecting relative speeds for common steels and Ability to apply all criteria and condition for selecting all carbide tipped tools and all raw materials tools that were measured 2.3393 and 2.4061 respectively.

Technical Education Graduates' knowledge of Building Technology

The results revealed that Technical Education Graduates effectively demonstrate the knowledge of Building technology in six out of the eight in the areas of the subject matter as presented below:

1. Knowledge of building components like foundations, walls, floors and roofs
2. Demonstrate knowledge of building science and materials
3. Demonstrate knowledge of structural design in building

These findings further revealed that TE Graduates are ineffective in demonstration of the knowledge of Identify risk areas including causes of risks and their impacts and Knowledge of stress, strain, shear force and bending moments.

Technical Education Graduates' knowledge of Electrical/Electronic Technology

The results revealed that Technical Education Graduates effectively demonstrate the knowledge of Electrical/Electronic technology in seven out of the ten in the areas of the subject matter:

1. Ability to carry out weekly routine maintenance exercise for all electrical equipment
2. Repair of damaged electrical equipment parts
3. Ability to replaced worn out parts of electrical equipment

These findings further revealed that TE Graduates are ineffective in demonstration of the knowledge of competency in the use of electrical measuring instrument, ability to install Electric motors and ability to repair a faulty electronic set.

Technical Education Graduates' knowledge of Metalwork Technology

The results revealed that Technical Education Graduates effectively demonstrate the knowledge of Metalwork technology in 13 out of the 15 questionnaire items in the areas of the subject matter:

1. Knowledge of welding equipment
2. Ability to carry out welding practical
3. Use of meal machine tools and equipment

These findings further revealed that TE Graduates are ineffective in demonstration of the knowledge of machinability and Practical analysis of metal chips structures selecting relative speeds for common steels and ability to apply all criteria and condition for selecting all carbide tipped tools and all raw materials tools.

DISCUSSION OF FINDINGS

According to the findings of the study, it is observed that TE Graduates of FCE (T), Potiskum teaching basic technology possess most of the knowledge in question in all the technical subjects as well as knowledge of general studies and that of lesson planning. These include auto-mechanic technology, building technology, electrical/electronic technology, metalwork technology, woodwork technology and technical drawing.

In table 4 the results revealed that Technical Education Graduates effectively demonstrate the knowledge of Building technology in six out of the eight in the areas of the subject matter. These findings further revealed that TE Graduates are ineffective in demonstrating the knowledge of Identifying risk areas in building including causes of risks and their impacts and Developing risk management/mitigation plans.

The results in table in table 5 revealed that Technical Education Graduates effectively demonstrate the knowledge of Electrical/Electronic technology in seven out of the ten in the areas. The findings also revealed that TE Graduates are ineffective in demonstration of the knowledge in the use of electrical measuring instrument, ability to install Electric motors and ability to repair a faulty electronic set.

The results that relate to metalwork technology as presented in table 6 revealed that TE Graduates effectively demonstrate the knowledge of the subject matter in 13 out of the 15 areas. The findings further revealed that TE Graduates are ineffective in demonstration of the knowledge of machinability and Practical analysis of metal chips structures selecting relative speeds for common steels and ability to apply all criteria and condition for selecting all carbide tipped tools and all raw materials tools.

SUMMARY

The need for competent Basic Technology Teacher who can teach at JSS level of the nation educational system is the sole aim of technical education. According to Federal Government of Nigeria (2004) through the National Policy on Education. One of the aim of technical education is to give training and impart the necessary skills leading to the production of craftsmen, technicians and other skilled personnel who will be enterprising and self-reliant. Based on the objectives of Technical Education as outlined above, a technical teacher must be properly trained and equipped. If inadequately, improperly trained technical teachers are employed to teach in the Junior Secondary Schools are allowed to continue unchecked, it then means that the dream of achieving the objectives of technical education will not be a reality.

This study adopts survey research design. The survey design seems to be suitable and appropriate because it involves collection of data through a questionnaire from a representative sample of the population. The study was carried out in Yobe state, Nigeria as 71% of these graduates were residing in Yobe state. Yobe state has geographical boundary of latitude $12^{\circ} 00' 00''$ North and longitude $11^{\circ} 30' 00''$ East of the equator with total area 46,609 sq/m (GPS Coordinates of Yobe state, Nigeria, 2015). The study covers all the Junior Secondary Schools in the state. The population for the study consisted of all the technical education graduates of FCE (T) Potiskum that graduated between 2010 and 2016 who are teaching Basic Technology in Yobe state. A breakdown of the total number of Technical Education graduates of FCE (T), Potiskum between 2010 and 2016 shows that out of the 844 graduates, 602 are residing within Yobe state; these represents 71 percent of the total graduates. Out of this number 420 were teaching with the Yobe state government.

The sampling technique adopted was random sampling technique. This technique is appropriate because it makes all members have equal chances of being selected, going by the size of the population.

The instrument used was a structured follow-up questionnaire that was designed by the researcher to elicit information from the respondents. The questionnaire was structured into four-point response category of:

Very Effective	= 4 Points
Effective	=3 Points
Ineffective	= 2 Points
Very Ineffective	= 1 Point

The data for the research was collected by the researcher using a structured follow-up questionnaire with the help of two research assistants that help in administering the instruments.

Data obtained from the respondents were analysed using computer programme of statistical package for social sciences (SPSS).

The decision was taken based on four-level category. When the response category has four-level ranging from 4 to 1 the mean is 2.50. Hence, any item with a mean value of 2.50 and above was accepted while item with a mean value less than 2.50 was rejected. With this study therefore, any item with a value of 2.50 or above was considered effective while item less than 2.50 was considered ineffective.

CONCLUSION

Based on the findings of this study, the following conclusions were drawn:

1. It has been observed that the performance level of TE Graduates in the knowledge and demonstration of technical subjects is generally effective, except in some few areas of the subject matter which need improvement.

RECOMMENDATIONS

Going by the findings of the study the following recommendations were made:

1. Technical education trainers should ensure adequate coverage of course outline of their courses at every semester. Skipping some topics can lead to what was revealed in the findings of this study.
2. Technical teacher training should emphasize the use of instructional materials during training to inculcate to the students the habit of using instructional materials.

- Adequate instructional materials should be provided during training of technical teachers and the skills of improvisation should be encouraged.

REFERENCES

- Ajala, J. A. (2002). *Design Content of the curriculum*. Ibadan: May Best Publication.
- Aminu, T.U. (2011). *Assessment of the Teaching Competencies of Technical Teachers in Technical Colleges in Gombe State*; Unpublished M. Tech. Thesis; Department of Technology Education, Federal University of Technology, Yola.
- Aminu, T.U. (2015). *Teachers' Competence in the Implementation of Basic Technology Curriculum*. *ATBU Journal of Science, Technology and Education (JOSTE)* Vol. 3(1), 135-141.
- Armstrong, M. (2006). *Blending Formal and Informal Approaches to Management Learning*. New York McGraw Hill Book Co.
- Babafemi, T. O. A. (2007). An assessment of the implementation of the 6-3-3-4 system of Education in Nigeria: A Case Study of Ilorin, Kwara State. Retrieved from [www.academia.edu/...](http://www.academia.edu/)
- Bulus, I (2010 *Teacher Technical Education: A Roadmap to Achieving Vision*): 20:2020. Paper delivered at the Convocation Lecture of Federal College of Education (Technical), Potiskum, Yobe State.
- Federal Government of Nigeria (2007). *Basic Technology Curriculum*. Nigerian Educational Research and Development Council (NERDC), Abuja.
- Federal Government of Nigeria (2004). *National Policy on Education*. Abuja: Federal Ministry of Education.
- Federal Government of Nigeria (2013). *National Policy on Education*. 6th Ed. Abuja: Federal Ministry of Education.
- Federal Ministry of Education (2004) *Science and Technology: National Curriculum for Junior Secondary Schools: Vocational, Introductory Technology, Agricultural Science, Business Studies, and Home Economics* (3). Lagos: Heinemann Educational books Ltd.
- Finch, C.R. and Krunkilton, J.R. (1984). *Curriculum Development in Vocational and Technical Education: planning, content and Implementation*. Newton, M.A.: Allyn and Bacon, Inc.
- Froydis, V., Einar, M. & Trude, F. (2011). *The Effect of Performance Appraisal in the Norwegian Municipal Health Services: a case Study*. Published online; doi: 10.1186/1478-4491-9-22.
- International Labour Office (2002). *Material presented at an expert working group at the UNESCO International Institute for Technologies in Education*, Turin Centre; Moscow
- Teachers Registration Council of Nigeria (2007). *Guidelines for the accreditation, monitoring and supervision of Teacher Education Programme in Nigeria*, Abuja TRCN.
- National Commission for Colleges of Education (2012). *Minimum Standards for Nigerian Certificate in Education: Vocational and Technical Education* 3rd Edition. Abuja; NCCE.
- Nessipbayeva, O. (2012). *The Competencies of the Modern Teacher*. Paper Presented at Annual Meeting of the Bulgarian Comparative Education Society. Bulgarian Comparative Education Society; 148-154. Retrieved from <https://eric.ed.gov/?id=ED567059>
- Okoro, O.M. (2002). *Programme Evaluation in vocational and technical education*. Obosi, Anambra state: Pacific Publishers.
- Omokhodion, J. O. (2008). Assessing the preparedness of Nigeria for her Universal Basic Education Programme. Pakistan: *Journal of Social Sciences*, 5, (9), 866-870.
- Shmelev, A. G. (2002). Psychodiagnosis of Personnel Characteristics. Saint-Peterburg. Retrieved from <https://files.eric.ed.gov/fulltext/ED567059.pdf>
- Steele, S.M. (1970). Program Evaluation: A wider Definition; *Journal of Extension*. 5-17. Retrieved From <https://www.sagepub.com/>
- Sule, M.N. and Bawa, A.G. (2012). 9-3-4 School Curriculum in Nigeria: Verification for its Accommodation of Kanuri Culture in Maiduguri Metropolis Area of Borno State, Nigeria. *Journal of Research in Education and Society*; 3(1), 22-40.

- Uwaifo, V.O. (2010). *A comparative study of the performance of students in Technology Education Theory and Practical Subjects in Nigerian Universities.* 4(2) 87-89 Retrieved from <http://www.kamla-Raj>
- Uwaifo V.O. & Uddin P.S.O. (2009) *Transition from the 6.3.3.4 to the 9.3.4 System of Education in Nigeria: An assessment of its implementation on Technology subject: stud Home Com Sci,* 3 (2). <http://www.kamla-Raj>
- Uwaifo V.O. & Uwaifo I.U. (2009): Training Technology and vocational Education Teachers for the New 9-3-4 Education System in Nigeria: Its problems and prospects; *International NGO Journal* 4(4). Retrieved from <http://www.academicjournal.org/ingo>.
- Uzoagulu, A. E. (2011). *Practical guide to writing research project reports in Tertiary Institutions.* Enugu. John Jacob's.
- Yalams, S.M. (2003). Analysis of Students' Performances in Metalwork at NCE Technical Level within Bauchi, Gombe and Yobe states of the North-East Sub-region of Nigeria. *Journal of League of Researchers in Nigeria* 4(2), 137-145.