

TEACHERS' COMPETENCE IN THE IMPLEMENTATION OF BASIC TECHNOLOGY CURRICULUM

BY

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mugaddampindiga@gmail.com**ABSTRACT:**

The importance of teachers in the implementation of educational programme cannot over emphasise. The success or failure of any educational programme is largely dependent on the competency of teachers that teach in the programme. This paper is motivated as a result of observed poor instructional performance of most teachers of basic technology. The study was aimed at assessing teacher's competences in teaching Basic Technology course at junior secondary schools (JSS) in Gombe state. The study has two specific purposes and was guided by two research questions. Descriptive survey research design was adopted in the study and conducted in 25 JSS, in Gombe state. A sample size of 30 teachers and 80 students was used using stratified random sampling technique, giving a total population of 110. structure questionnaire developed by the researchers was used for data collection. The instrument was validated by experts and its reliability coefficient was determined to be 0.82. The results of the study among others revealed that: teachers of Basic Technology in Gombe state JSS, possess adequate four pedagogical competencies among the nine pedagogic items asked under it, and possess only 1 technical competence among the 9 items asked. The study therefore recommends among others that; enough time and space should be provided in the school time table for basic technology lesson, so that teachers can split the high students' population for convenient teaching of the course.

Key Words: Teachers Competencies, Implementation, Basic Technology.

INTRODUCTION

One major key goal of Nigeria vision 2020 is to give vibrant and modern technology education system that will provide facilities and opportunity to individuals for them to achieve maximum potentials and provide the nation with adequate and competent man power needs. This goal is achievable through competent ability of Basic Technology teachers at the grass root level of technology education referred to as Basic Technology, offered at junior secondary school (JSS) and upper basic primary education. Teachers play an important role in the implementation of educational programmes. The national policy on education NPF states that no nation can rise above the quality of its teachers (FRN, 2004).

The introduction of Basic Technology in JSS as a subject is as a result of the recommendation of national policy on education 2004, revised in 2008. The policy states that the primary objectives of teaching basic technology education are as follows;

- i) To improve pre-vocational orientation for further raining in technology.
- ii) To provide basic technology literacy for everyday living and
- iii) To stimulate creativity.

These objectives could only be achieved if well trained and competent teachers teach the subject. Abdussalam (2006) defines competency as an optimum level of awareness, understanding and perfection which one must have achieved in order to be rated as successful and effective. Aminu (2011)

defines competency as the ability of an individual to perform an action to standard. These definitions show that for a technical teacher to be rated as competent he /she must possess all the qualities that make one to achieve his duties as a teacher. Similarly, in the teaching of technical subjects including basic technology course, teachers ought to possess those qualities that will make them to teach the subject to standard.

Stating the areas of competency that technical teachers must possess, Olaitan (1995) posits that technical teachers must be competent in the technical subjects which they teach to the extent that students achieve the technological self reliance after graduation. this specifies the need of a technical teacher to be skilful in the subject area which he/ she teaches. Technology is practical oriented subject which calls for one to have the skills aspects before he could be rated as competent to teach that subject. Similarly, Ndubisi and Ali in Abdurrahman (2007) states that professional training of teachers without proper grasp of the knowledge of the subject matter is more than a waste of time because end result can be the effective spread of ignorance.

In addition to trade skills competence, teachers of technical education are also to possess teaching competence otherwise called, instructional competence. Possessing the skills of the trade subject taught is one thing and ability to impart same (teach) to students is another? In his own contribution, Dembicki (1998) posits that, technical teachers must possess methodology in the teaching of the knowledge and manipulative skills to their students. Stressing this, Okoro (2002) explains that teachers make more impact on the performance of students more than any other personnel in the school; he therefore opines that assessment of teacher's competence should more importantly include his instructional ability. This may include all the teacher could do in the delivery of his lesson to make the teaching/learning process successful and effective. Similarly, Yalams (2003)

posits that the little knowledge of educational psychology that technical teachers acquire during his training only assists him in understanding his learner during the teaching /learning process. In addition technical teachers must possess the methodology of teaching technical subjects.

In education system therefore, teachers' competences are important phenomenon in the success or failure of the educational programme. Teacher's specifically basic technology teachers, that build the grass root of science, technology and engineering for better Nigeria should possess the relevant teaching competencies, most importantly in the areas of pedagogy and skills training. These are areas that allow teachers to teach their trade areas effectively. Olaitan (1995) states that technical teacher must be competent in the technical subjects which they teach to the extent that students achieve the technological self reliance after graduation. Similarly, Abass (2000) opines that technical teachers must know their teaching subject's basic general knowledge to be able teach effectively. It is therefore not wrong to say that for teachers teaching basic technology course to be regarded as competent must possess adequate knowledge of the subject matter (both practical and theory) and skilful in instructional delivery.

The above discussions shows that competency in instructional delivery and skills in the teaching of practical on subject trade constitute the most important aspects of competence that teachers of basic technology must adequately possess to enable them perform their function as teachers in the implementation of the programme. Furthermore, literature consulted on teacher's competencies shows that much work have been done on teachers competency at various levels of education, different educational programmes, and curriculum content delivery, but it seems no work has been carried out specifically on basic technology teacher's competence in JSS. This study therefore strived to focus on

assessing the competency of basic technology teachers with for effective implementation of basic technology education in JSS.

STATEMENT OF THE PROBLEM

Despite huge money being allocated for the proper implementation of Basic Technology education in JSS and last three years of 9-year primary education, yet the journey so far seem to be faced with a lot hindrances ranging from ineffective instructional methods inadequate provision for facilities for students practical, and overcrowded classrooms (Obafemi, 1999 and Abubakar, 2000). Similarly, Asale (2005) observed that most schools are having acute shortage of competent teachers that teach Basic Technology course in the implementation of the programme. In the same vein, researchers like; Apagu (2006), Osuala (2007), and Aminu (2011) independently observed that most technical teachers in Nigeria lack required technical skills thus, could not perform competently in the world of work.

Consequently the complexity of learners of Basic Technology become discouraged thus, the realisation of the objectives of the programme becomes very weak. Most students graduate in the programme that does not acquire the relevant skills, which will not lead the country into industrial and technological development, there by promoting shortage of trained man power. This prompted this study and is aimed at working on the competencies of Basic Technology teachers to improve the effectiveness of the implementation of the programme.

PURPOSE OF THE STUDY

The purpose of the study is to assess the level of competencies of Basic Technology teachers at JSS in Gombe state. Specifically the study sought to:

1. Determine the adequacy of pedagogic competencies possessed by Basic Technology teachers in JSS of Gombe state.

2. Determine the adequacy of technical competencies of Basic Technology teachers in JSS of Gombe state .

Two research questions were formulated to guide the study.

METHODOLOGY

The study adopted a descriptive survey research design, since it involved assessment of attitude, motivation, opinion, and activities using questionnaire (Uzuagulu, 2013). The study was conducted in Gombe state of Nigeria. The population of the study was 12978, comprising of 142 Basic Technology teachers and 12836 JSSIII students. The sample of the study is 110 comprising of 30 Basic Technology teachers and 80 JSS III students. Stratified random sampling was used to come up with the total sample of 30 teachers became 42% of the total population of basic technology teacher while 80 JSSIII students forms 15% of the total population of the 5 sampled JSS for the study. The instrument used for data collection was a structured questionnaire developed by the researchers, on teachers' competences in the implementation of Basic Technology education programme. The instrument was titled; teachers' competencies in the implementation of Basic Technology education programme (TCIBET). Section A of the instrument requested for respondents data. Section B consisted of the research questions one and two items statements to be rated by the respondents on four point rating scale (4= strongly Agreed, 3= Agreed, 2=Disagreed and 1= Strongly Disagreed). The instrument was validated by experts and pilot tested in 1 JSS. The results obtained were computed using Cronbach's Alpha formula to determine its reliability. The reliability coefficient of the instrument was determined as 0.87. Asika (1991) states that attest instrument with reliability coefficient ok 0.6 – 1.00 are regarded as appropriate. Hence, the instrument (TCIBET) was used to collect data for the study.

The method used for data analysis in the study was the descriptive statistics. Grand mean of the mean responses of teachers and mean responses of JSSIII students was used to draw inferences. A cut-off

point of 3.0 was used as the decision rule, to determine if a competency item is adequately or inadequately possessed by Basic Technology teachers.

RESULTS

The following are the results of the study:

Research Question 1: what is the adequacy of pedagogical competence possessed by Basic Technology teachers in JSS in Gombe state?

Table 1: Analysis of the pedagogical competencies possessed by Basic Technology teachers of JSS in Gombe state.

| Item No. | Competency Statement | X ₁ | X ₂ | Gr X | Remark |
|----------|--|----------------|----------------|------|--------|
| 1. | Teachers' skill in the use of chalkboard | 3.42 | 3.08 | 3.25 | ADQT |
| 2. | Teachers' use physical movement during teaching | 3.50 | 2.41 | 3.00 | ADQT |
| 3. | Teachers' Use of different teaching methods | 3.41 | 2.41 | 2.91 | IADQT |
| 4. | Teachers' have skills in classroom management | 2.41 | 2.06 | 2.34 | IADQT |
| 5. | Teachers' good command of English | 2.45 | 3.58 | 3.02 | ADQT |
| 6. | Teachers' use appropriate teaching aids | 3.44 | 3.47 | 3.46 | ADQT |
| 7. | Teachers' practice the use of formative evaluation | 2.04 | 2.19 | 2.11 | IADQT |
| 8. | Teachers' evaluate their lesson at the end of teaching | 3.92 | 3.44 | 3.68 | ADQT |
| 9. | Teachers' use assessment results to make decision | 2.48 | 2.16 | 2.32 | IADQT |

Table 1 above shows that teachers possess adequate pedagogic competencies in item statements 1, 2, 5, and 6 with grand mean score of 3.25, 3.00, 3.02, 3.46, and 3.68 respectively, while they possess

inadequate pedagogic competencies in item statements 3, 4, 7, and 9 with grand mean score of 2.34, 2.91, 2.11, and 2.52 respectively.

Research Question 2: what is the adequacy of technical competencies possessed by teachers of Basic Technology in JSS of Gombe state?

Table 2: Analysis of the technical competences possessed by Basic Technology teachers of JSS in Gombe state.

| Item No. | Competency Statement | X ₁ | X ₂ | Gr X | Remark |
|----------|--|----------------|----------------|------|--------|
| 1. | Teachers' skills in material selection for practical | 2.42 | 3.28 | 2.85 | IADQT |
| 2. | Teachers' skills in organising tools for practical | 2.21 | 2.18 | 2.20 | IADQT |
| 3. | Teachers' skills in equipment handling | 3.81 | 3.42 | 3.61 | ADQT |
| 4. | Teachers' skills in exhibiting practical knowledge | 2.48 | 2.61 | 2.55 | IADQT |
| 5. | Teachers' skills in demonstrating the skill taught | 1.67 | 1.49 | 1.48 | IADQT |
| 6. | Teachers' skills in giving students opportunity to perform during practical lesson | 2.05 | 1.03 | 1.90 | IADQT |

| | | | | | |
|----|--|------|------|------|-------|
| 7. | Teachers' skills in guiding students during practical | 1.21 | 1.46 | 1.84 | IADQT |
| 8. | Teachers' skills in relating scientific ideas into practical application | 2.41 | 3.28 | 2.85 | IADQT |
| 9. | Teachers' skills in observing safety precautions | 2.14 | 3.11 | 2.63 | IADQT |

Table above shows that teachers possess adequate technical competence in item question 3 with grand mean score of 3.61, while they possess

Key to tables:

X1= mean score of teachers responses

X2= mean score of JSSIII responses

Gr X= grand mean score of teachers and JSSIII students responses.

ADQT= adequate

IADQT= inadequate

DISCUSSIONS OF FINDINGS

According to the findings of the study, it is observed that teachers of Basic Technology in JSS in Gombe state possess most of the pedagogic competencies in question including; use of chalk board, movement in class when teaching, good command of English in teaching, ability to use teaching aids, and skills in lesson evaluation. On the other hand the teachers lack competencies in the areas of classroom management, use of different teaching methods and formative evaluation using assessment result in decision making.

The lapses observed in the competency aspects may be connected to mass enrolment of students per class. Obviously, the larger the student's population in a class the lower the tendency of effective class control. The recommended student's population for the teaching of technical subject as specified in the national policy on education is 1:20 teacher student's ratio. The existing population currently as a result of education demands in our community is by far higher than recommended. This in turn hinders the possibility of proper classroom management. Similarly, the situation makes it difficult for the teachers to assess students at the end of the lesson talk less of using assessment results for

inadequate technical competencies in items question 1, 2, 4, 5, 6, 7, 8, and 9 with grand mean score of 2.85, 2.20, 2.55, 1.48, 1.90, 1.84, 2.85, and 2.63 respectively. decision making. Lack of end of lesson evaluation makes it difficult for teachers to justify decision on delivery of next lesson content. This thus, affects teaching /learning process hence, minimum instructional objectives is always achieved.

On the issue of research question 2, the result of the study revealed that teachers possess adequate technical competence in only 1 aspect of technical competency items in quest. The possession of only 1 in 9 items signifies that teachers lack technical competence in teaching Basic Technology. This shows that the teacher lack one of basic competencies for teaching the subject as recommended by; Olaitan (1995), Abass (2000), and Yalams, (2003), who independently stated that teachers of technical education must possess Knowledge and skills of the subjects they teach to enable them, teach the subject effectively to their learners.

The finding of this study agrees with the findings of Apagu (2006), Osuala (2007), and Aminu (2011) who independently observed that most technical teachers in Nigeria lack required technical skills thus, could not perform competently in the world of work. Technical teachers including teachers of Basic Technology at JSS level must possess the skills of their subject they teach to enable them teach the subject effectively. The findings of this study especially in the aspect of teachers technical competence in teaching Basic Technology in JSS is an indicator that, students gain less than expected in the subject area (Basic Technology) thus, objective of including it in the curriculum is to large extent defeated.

CONCLUSION

As a result of the finding of this study, it is concluded that most teachers of Basic Technology in JSS in Gombe state do not adequately possess most of the basic competencies for implementation of Basic Technology programme at JSS level. Thus, the impact of that on students is that they lack exposure in sciences and engineering trades from the grass root. Thus, the objectives; improving of pre-vocational orientation, Basic Technology; literacy and creativity stimulation in students is greatly not achieved.

RECOMMENDATIONS

- 1) Enough time and class rooms should be allocated for the teaching of Basic Technology lessons, so that teachers can split the dense class population to suit technical lesson.
- 2) Teachers of Basic Technology should be included in teachers of technical education in the ministry of education so that they can be transferred to teach in technical colleges to gain more skills through interaction with skilful teacher colleagues.
- 3) Ministry of Education should be organising in house workshops and seminars specifically for Basic Technology teachers.

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