

## EVALUATING BASIC TECHNOLOGY INSTRUCTION IN NIGERIAN SECONDARY SCHOOLS

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### Abstract

*Evaluating deals with purposive assessment of the entire system or sub-system on which the managers operate. It is an important technique which when appropriately adopted results into effective teaching and learning of practical subjects. This study focused on identification of evaluating techniques aimed at improving the teaching of Basic technology in Edo State. The area of study comprises of the eighteen Local Government Areas (LGA) in the state. Survey design was employed for the study covering a population of 160 (60 principals and 100 Basic technology teachers). The hypotheses were tested at 0.05, level of significance. Findings from the study indicated various techniques for evaluating instructions in Basic technology workshop. The result of the hypotheses showed that there was no significant difference in the mean responses of the respondents on the management techniques identified for instruction. However, it therefore recommended that the management techniques identified by this study should be integrated into the school curriculum for Basic technology teachers to use during workshop instruction.*

**Keywords:** Evaluating instruction, basic technology.

### Introduction

Basic technology before now known as “introductory technology” was structured to assist learners to develop interest in technology. The aim is that at the end of junior secondary school, technological appreciation would have been attained and solid foundation laid for students’ entrance into a vocation of their choice. This is in consonance with the statement in the National Curriculum for Junior Secondary Schools (1998). Amongst others, it states that in order to reduce ignorance about technology, help lay a solid foundation for national development and for increase in skill acquisition, the subject of Basic technology is to be offered in junior secondary schools”

The management of Basic technology workshop should be such that at the end of the programme, the products would

appreciate technology and practice it. The implication of management of Basic technology workshop is that more than anything and anywhere else, the management of Basic technology programme should be directed toward achieving alteration of human conception of literal education towards technology, which is the new world orientation. This can take place in no other place than in the effectively managed and organised workshops. This assertion has been acknowledged by Ezeocha (1990) as he stated that, “it must be understood that the workshop management is not just a mechanical chore involving only material things and inanimate systems, it is much concerned with the people involved and influenced by this aspect of management as things, forms and systems”. If the management involves human being as noted by Ezeocha, it means that everybody

involved must contribute to its success and the management process and organization must guarantee safety and healthy environment. Increase in skill acquisition is usually attained when workshop facilities are well managed (Nwachukwu, 2001). There is no human endeavour that does not require proper management for its better functioning. Management is one of the most important activities that permeate all organizations. All types of organisations whether profit or non-profit making require good management to function effectively. With better management technique, Basic technology teachers will utilize workshop facilities in more beneficial ways.

#### **Techniques for evaluating instruction in basic technology**

Evaluation is described as “the systematic process of judging the worth, desirability, effectiveness or adequacy of something according to definite criteria and purpose” (Haris, 1968 in Okor, 1999). Nwachukwu (2001), also defined evaluation as the process of determining how much learning the learner in an educational setting has acquired. In general terms, it is the process of reaching decisions. The major function of evaluation is to determine the level of implementation.

The concept of this evaluation is implicit in the teaching-learning process. At all levels of education today, the keyword which everybody is looking for is accountability. To this end serious demands are always been made on the part of the teacher intentions in terms of specific objectives, so that students’ learning outcome can be useful. In this way schools in Nigeria can evaluate their teachers in terms of their students’ performance. This measure is likely to force these teachers to adhere to the continuous assessment process recommended in both primary and post-primary school in Nigeria. Evaluation as a management function is closely related to planning. Evaluation in this context will not be perceived as a measurement of students’ success alone but also of teaching

effectiveness and efficiency in using resources. Evaluation of this nature is necessary in the present Nigeria school system, if education is to keep pace with time.

According to Nwachukwu (2001), what the teacher really needs to find out following the review of students perspective in whether:

- a) The materials required for practical in the workshop were sufficiently supplied and then the quantity used for work.
- b) There is any particular step in the procedure for doing the work that is particularly difficult and hazardous for students during the working experience.
- c) There are tools or equipment that were particularly difficult to operate or did not function in the work.
- d) There are certain aspects of the work experience that should require more time to be completed.
- e) The information collected after the work experience was clear and useful to the students.
- f) The students can organize and analyze the information so collected.
- g) There are some resources of misinformation in the work experience that has been completed.
- h) There are some steps in the procedure to complete the work experience that should be modified.

It is the responsibility of the teacher to assess the students so as to ensure that they have achieved the objectives of the lessons. When these students are in individual workshop work, it is always necessary for them to discuss their individual results, data collected and experiences gained. The idea is to ensure that these students expose themselves to various problems-solving techniques in the workshop. Results of workshop experiences can help students formulate generalization focus on concepts and evaluate the importance and relevance of the work experience they have done.

When students in the workshop perform different tasks, the teacher should evaluate the effectiveness of each of these jobs and decide if the procedure for carrying them out was clear enough. In other words, the teacher must evaluate students' work experiences in the programme of the school, as well as determining what further activities these students can accomplish.

### **Statement of the problem**

The major aim of Basic technology education in Nigeria is to explore the fundamentals and develop vocational competencies among youths so that they can appreciate the technological world and contribute maximally to the nation's economic growth. The Basic technology curriculum provides that the teaching and learning of the subject should be both theoretical and practical in nature (NPE, 2004). As a skill oriented subject, whose major aim is to expose the learners to the rudiments of technology, it is very necessary that it should be taught with equipment. This will enable the recipients to gain awareness, appreciation and orientation into technology that will enable them develop further or choose a trade.

According to Aina and Beecraft (1999), for students to acquire skills, practice is essential in well-equipped and managed workshop. Most school shops in the state tended to be untidy and deplorable. While it is true that good equipment and management do not guarantee efficient teaching, it is also true that well managed facilities greatly improve the possibilities for good teaching (Andrew, 2000). A well-managed workshop is an asset to the teacher, the school and the community. As a place for practical work and study, the quality of instruction and learning is positively influenced by the manner the workshop is managed. Unfortunately, the evaluation of Basic technology workshop in the State is not encouraging (Agu, 2002).

Based on this however, there is a glaring need to evaluate the strategies used in the workshop management to see where the fault

lies and address these problems in the programme. Hence, the researcher is interested in determining the way of improving the effective management and evaluation of basic technology workshop programme in Edo state for optimum performance.

### **Hypotheses**

The following hypothesis was raised to guide the study:

**Ho:** *There is no significant difference between the mean responses of Basic technology teachers and school principals on the techniques for improving the evaluation of instruction in basic technology workshop.*

### **Scope of study**

The study was restricted to the identification of workshop management techniques required by teachers for enhancing the teaching of Basic technology programme in Edo state. The respondents for the study were restricted to Basic technology teachers and principals in the public junior Secondary Schools in Edo State.

### **Design of the study**

The survey design was used in this study. This is in keeping with Amechi (2003) that where a study involves a population or a sample of respondents from whom information is obtained either verbally or through questionnaire on the issue or questions relating to the objective of a study, the ideal method of research is the survey method.

### **Area of the study**

The area of the study is Edo state in Nigeria. Its choice was informed because of the poor management and deplorable conditions of Basic technology workshops observed to be on the increase in the state.

### **Population and sample**

The population for this study consist of one hundred and sixty (160) respondents which

comprise of all the one hundred (100) Basic technology teachers in the secondary schools and all the one hundred (100) principals, drawn from the sixty (60) schools offering Basic technology in all the public secondary schools across the eighteen (18) local government area in the state. The population covers all the secondary schools where Basic technology is taught in the state, hence no sample was taken, as the entire population was used for the study. Basic technology teachers and principals were chosen to constitute the respondents for the study because they are the teachers, administrators and supervisors or managers in the school system.

**Method of data analysis**

The t-test statistics was used to test the null hypothesis of no significance at  $p \leq 0.05$  and 175df

For any item whose calculated value is higher than the table value of 1.97, the hypothesis of no significant difference between the mean rating of Basic technology teachers and principals was upheld. If the calculated value of any item is greater than the table value of 1.97 at  $p \leq 0.05$  and 175df, the hypothesis of no significance difference between the mean rating of Basic technology teachers and principals on that item is rejected.

**Hypothesis**

*There is no significant difference between the mean responses of Basic technology teachers and school principals on the techniques for improving the evaluation of instruction in Basic technology workshop.*

Table 1: t-test analysis of the mean responses of respondents on techniques for improving the evaluation of instruction in Basic technology workshops in Edo State.

S/No	Techniques	Basic. Tech. Trs (N=100)		Principals (N=60)		t-cal	Rmk
		X <sub>1</sub>	SD <sub>1</sub>	X <sub>2</sub>	SD <sub>2</sub>		
1	Considering the quantity of materials used in completing one project is essential	3.65	1.02	3.89	0.97	1.83	NS
2	Identifying the tools and equipment that were particularly difficult to operate.	3.86	0.94	3.98	0.97	0.20	NS
3	Identifying the steps used in completing the project that needed modification	4.00	0.92	3.83	1.03	1.21	NS
4	Identifying any particular step in the production that is hazardous	3.65	1.15	3.89	0.86	1.60	NS
5	Checking the accuracy of the finished product.	3.94	0.95	4.19	0.74	0.40	NS
6	Finding how much time was used by the students in completing the project.	3.17	0.96	3.77	1.13	0.37	NS
7	Finding how much knowledge and skills the students have acquired.	4.04	0.84	3.98	1.10	0.40	NS
8	The teacher asking what was his achievement and failures after completion of a project	3.22	1.29	2.93	1.26	1.52	NS
9	The teacher asking how hard or easy was the technique he had used.	3.75	1.12	3.92	1.16	1.00	NS
10	periodic reviewing of occupational and project objectives	3.40	1.28	3.18	1.33	1.15	NS

Key: t-table = 1.97  
df = 175  
NS = Non significant  
SG = Significant

Data presented in table above, revealed that each of the 10 evaluating technique items had a t-calculated value less than the t-table value of 1.97 (two tail test) at 0.05 level of significance. This indicated that there was no significant difference between the mean responses of the two groups of respondent on techniques for improving the evaluation of instructions in Basic technology workshop in Edo State. With this result the Null hypothesis (Ho) of no significant difference was upheld for all the evaluating techniques.

#### **Findings of the study**

Based on the study, the following findings were made:

1. It was discovered that there was no significance difference between the mean rating of responses of Basic technology teachers and the principals on the improvement required by Basic technology teachers in evaluating Basic technology workshop instruction in the secondary schools in Edo State.
2. It was also discovered that the respondents agreed that the Basic technology teachers require improvement in the areas of evaluation in order to improve the teaching and learning of workshop instruction.

#### **Discussion of findings**

The findings of this study revealed that the respondents agreed that Basic technology requires improvement in all the evaluation workshop management technique for improving the teaching of Basic technology programme in Edo state. This is in conformity with the opinion of Olaitan et al 2002, that effective management technique for teaching in workshop is the involvement of the workshop staff in evaluating training

facilities for the purpose of learning skills in various occupations. This management technique has its required skills. For example,

The technique identified by this study as contained above were in consonance with the opinion of Olaitan and Mama (2001) that workshop teachers should equip themselves with certain evaluating technique like:

- a. develop skill evaluation form
- b. record evaluation grades
- c. provide feedback to students

This view and opinions expressed by these experts cited on management skills help to validate the findings of the study thereby making the identified evaluating technique very essential to be possessed by the Basic technology workshop instruction in the junior secondary schools in Edo State.

#### **Conclusion**

By way of conclusion it is clear that, with the identified workshop management techniques, graduates of the junior secondary school levels in Edo state would be better equipped with skills in their chosen trades/careers for self employment. Principals and Basic technology teachers jobs might to easier and more effective since the information provided by the study would have identified areas of deficiencies in their workshop lessons.

It is now established for instance that the general public would benefit immensely from the outcomes of the study as the self-employed graduate through improved teaching resulting from appropriate workshop management techniques producing articles and services for the consumption of the citizens.

#### **Recommendations**

Based on the findings of the study, the following recommendations were made:

1. Basic technology teachers should be allowed to draw out an annual budget for the provision of essential consumable tools and training materials for effective practical work and these consumables should be provided by the school.
2. The evaluation techniques in which the Basic technology teacher requires

improvement as identified in the findings of this study should be developed into a package by the state government through the assistance of their curriculum experts and be used for re-training Basic technology teachers in the Edo State.

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