TECHNIQUES FOR ENHANCING INTRODUCTORY TECHNOLOGY INSTRUCTION IN EDO STATE, NIGERIA

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ABSTRACT

Techniques are effective means of attaining competency in job or occupation. The techniques are important ways which when appropriately adopted results into effective teaching and learning of practical subjects. This study focused on identification of management techniques aimed at improving the teaching of introductory technology to achieve vocational education objectives 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 260 (120 principals and 140 introductory technology teachers). The hypotheses were tested at 0.05, level of significance. Findings from the study indicated various techniques for planning, organising, implementing, coordinating and evaluating instructions in introductory 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 in the five areas of workshop instruction. However, it therefore recommended that the management techniques identified by this study should be integrated into the junior secondary school curriculum for introductory technology teachers to use during workshop training of their students in this current programme in Edo state.

INTRODUCTION

According to Aina and Beecraft (1999), for students to acquire skills, practice is essential in well-equipped and managed workshop. The implementation of Universal Basic Education in Edo State suggests population explosion in both primary and junior secondary school in the state. This calls for more facilities and appropriate management techniques to match quality with the student enrolment increase. Many technical teachers in Edo State seem not to be aware of the importance of good workshop management practices or have misguided notions on what it involved (Agu, 2002). Most school shops in the state tended to be untidy and deplorable despite huge investment by government. 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.

According to Ivowi (1981), the objectives of introductory technology under the UBE programme are:

- To provide student with technological literacy required for everyday living.
- To provide pre-vocational orientation for future development of employable skills and training in technology
- To stimulate creativity.

These objectives are fully backed by UNESCO, as in 1972, UNESCO organised world wide conference on this topic of introducing prevocational education to students at early stage. At that conference, about 40 countries attended (UNESCO document 1972) and at the end of it all, the following objectives were given:

- Adjustment of educational to industrial and social needs
- Change of attitude
- Preparation for modern life
- Improvement of learning process
- Creativity and imaginative approach
- Pre-requisites for further vocation and technical education
- Observation and orientation

Putting all these objectives from different experts into consideration, one would agree that introductory technology programme provides a broad based skills development approach to practice-oriented work where practical application of day-to-day needs in the service of man is emphasized.

MANAGEMENT AND ORGANISATION OF INTRODUCTORY TECHNOLOGY WORKSHOP

Numerous definitions of management process exist. However, not everybody or all writers agree on the terminology or the sequential nature of the process. Basically management is a means of controlling changes through the use of resources to achieve the organizations goals. A rational management process may be defined as the one, which all management behaviour is demonstrated, related to the attainment of goals (Toby, 2000). Management can also be broadly defined as an accountability system. This definition assumes that unless an organization structure has built into its system the mechanism which concisely accounts for who is accountable for what is measurable or in more succinct terms, its structure is administrative rather than management. Management of resources in technology education can be described as a process of decision on how the resources could be produced, used and maintained for the attainment of objective. It involves the coordination and control of human, infrastructure, materials (equipments and facilities), and finance used for the running sustenance and improvement of activity of a given organisation efficiently and effectively (Asilokun, 2003).

Ezeji (2003), defined management as the act of getting things done through people. According to him, some management function that technical teachers perform as follows:

- **Planning** – this means purposeful preparation in advance of what is to be done in future.
- **Organizing** – entails dividing work to be done by individuals and developing a structure to ensure its completion.
- **Coordinating** – arranging various activities of the organization in such a way that the process flow smoothly without delay, collision or friction. School timetable is a good example used in coordinating different activities into harmonious function.
- **Controlling** – means a procedure for measuring performance against objective of an organization. It deals with such questions as: did what was suppose to happen, really

happen? Why or why not? Who was really responsible? Controlling means measuring and correcting performances or activities of sub-ordinates in order to ensure that enterprise objectives and plans at being accomplished.

- **Directing** – it is much more than ordering or commanding people to do things. It involves motivating and guiding subordinates to achieve organizational objectives. Directing workers include understanding a bit about human behaviour at work. Communicating, motivating and leadership are all behaviour areas in directing.
- **Evaluating** – deals with purposive assessment of the entire system or sub-system on which the managers operate.

One of the theories of management is that of management by objectives (MBO). According to Olaitan, et al (1999), it is an administrative strategy concerned with collaborative and mutual setting of goals and objectives for programme by the administrators and the staff. It incorporates the functions and responsibilities of each staff and personnel involved in the implementation of the programme. It also accommodates the setting up of strategies for directing, and controlling of resources towards achievement of the set objectives of each unit of the programme. This means that introductory technology workshop should be administered through the Principle of Management of Objective (MBO).

STATEMENT OF PROBLEM

The introductory technology curriculum provides that the teaching and learning of the subject should be both theoretical and practical (NPE, 2004). As a skill oriented subject, it is very necessary that introductory technology 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. In many schools across Edo state offering Introductory Technology, there are no functional workshops, while few ones that may be housing some few workshop items are not been put to effective use owing to various reasons. One of the major goal of the programme in Nigeria is to develop vocational competencies among youths and adults so that they can contribute maximally to the nation's economic growth since the 6-3-3-4 has failed in this regards as observed in the performance of students in junior secondary school certificate examination results in Introductory Technology subjects reveals a downward trend.

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 management of introductory technology workshop in Edo State is not encouraging (Agu, 2002).
In view of the above, the researcher is interested in determining the way of improving the effective management of introductory technology workshop in Edo state, with a view to determining the techniques for the teaching and learning of the programme in secondary schools in the area under investigation.

HYPOTHESES

There is no significant difference in the mean response of principals and introductory technology teachers on techniques for enhancing workshop instruction in secondary schools.

SCOPE OF STUDY

The study was restricted to the identification of workshop management skills required by teachers for enhancing the teaching of introductory technology under the UBE programme in Edo state.

The respondents for the study were restricted to introductory technology teachers and principals in public Secondary Schools in Edo State.

POPULATION AND SAMPLE

The population for this study is two hundred and sixty (260), which will comprise of the all the one hundred and forty introductory technology teachers in secondary schools and all the one hundred and twenty principals of the secondary schools offering introductory technology in the state (M.O.E., 2009).

Since the two hundred and sixty (260), populations covers all the secondary schools where introductory technology is taught in the state, no sample is taken, as the population is sizable for the study. Principals and introductory technology teachers are chosen to constitute the respondents for the study because they are the administrators and supervisors or managers in the school shop.

See table 1 for distribution of respondents on local government basis:

Table 1: Distribution of Population According to Local Government Areas

S/No	Local Government Areas	Principals	Intro.TechteacherS	Total No. of respondents
1	Akoko-Edo	06	07	13
2	Egor	08	08	16
3	Etsako-Central	07	08	15
4	Etsako-East	06	07	13
5	Etsako-West	06	07	13
6	Esan-Central	06	08	14
7	Esan-North	08	08	16
8	East-Southeast	07	09	16
9	Esan-West	08	10	18
10	Igueben	05	07	12
11	Ikpoba-Okha	06	07	13
12	Oredo	09	11	20
13	Orhiomwon	07	07	14
14	Ovia-NorthEast	06	07	13
15	Ovia-SouthWest	06	06	12
16	Owan-East	07	09	16
17	Owan-West	06	08	14
18	Uhumwode	06	06	12
	Total	**120**	**140**	**260**

Source: Prepared by the Researcher.

INSTRUMENT FOR DATA COLLECTION

The instrument for data collection was the questionnaire. The questionnaire was carefully designed after an extensive literature review. The necessary texts and manuals relevant to the study were also consulted. The items in the questionnaire were organized in accordance with the research questions and hypothesis.

HYPOTHESIS

There is no significant difference in the mean response of principals and introductory technology teachers on techniques for enhancing workshop instruction in secondary schools.

Table2: T-Test Analysis of the Mean Responses of Respondents on Techniques for Enhancing Instruction in Introductory Technology Workshop in Edo State.

			Principals		**Into. Tech. Teachers.**		
S/No	**Technique**	**X_1**	**SD_1**	**X_2**	**SD_2**	**t-cal**	**Rmk**
1	Selection of appropriate materials, tools and equipment to be used.	4.25	0.78	4.18	0.65	0.63	NS
2	Identification of practical lessons objectives	4.03	0.83	3.70	1.05	0.56	NS
3	Selection of practical projects within the ability of students	4.10	0.75	3.82	1.02	0.46	NS
4	Consideration of duration for the workshop lessons.	3.80	1.00	3.93	0.95	-0.93	NS
5	Grouping of learners based on workstations available	4.09	0.85	3.76	0.98	0.55	NS
6	Ensuring the availability of supportive personal to assist learners	3.62	0.24	3.17	0.83	3.10	SG
7	Listing clearly the roles to be performed by the students in lesson	3.66	1.30	3.62	1.12	0.21	NS
8	Stating clearly the roles to be performed by the teacher in the lesson	3.89	3.80	3.80	0.98	0.64	NS
9	Trying out of the work before the actual execution	3.59	1.25	3.87	1.08	-1.64	NS
10	Ensuring that all safety devices to be used for the lesson are in place	4.09	0.87	3.94	0.83	1.25	NS
11	Drawing up step by the procedures of carrying out the task.	3.75	1.05	4.04	0.85	-2.07	NS
12	Preparation of learning sequence that is starting from simple to complex steps	3.89	0.94	3.72	1.16	1.33	NS
13	Fixing of workshops lessons to avoid clashing with major school events.	3.18	1.27	3.25	1.30	-0.36	NS

Key: t-table=1.97
d.f = 175
N.S. = Non significant
SG = Significant

Data presented in table 2 revealed that 12 of the 13 techniques items had t-calculated value less than the t-table value of 1.97 (two tail-test) at 0.05 level of significance and 175 degree of freedom. This indicated that there was no significant difference between the mean responses of the groups of respondents (principals and introductory technology teachers) on the 12 techniques for enhancing instruction in introductory technology workshops in Edo State.

Also the data in the table revealed that item 6 out of the 13 technique items had a t-calculated of 3.10 which is greater than t-table of 1.97 at .0.05 and 175 df. This indicated that there was significant difference between the mean responses of the two groups of respondents on this items; ensuring the availability of supportive personnel to assist planners as a technique for planning instruction in introductory technology workshop. With this result, the null hypothesis (Ho) of no significant difference was upheld for 12 techniques items but rejected for 1.

DISCUSSION

It was found from this study that there was no significant difference in the mean responses of the respondents on 12 of the 13 techniques for enhancing instruction in introductory technology workshops in Edo state. However it was found that there was a significant difference in the mean responses of the respondents on item 6: ensuring the availability of supportive personnel to assist students.

The respondents who were made up of principals and introductory technology teachers may differ because of the principals who already have or do not have supportive personnel may want to have their status quo maintained. The teachers on the other hand may insist on having supportive staff, hence accounting for the significant difference in the respondents' response. Generally, it is good to have supportive staff in school shops on matter the reasons for the difference in the respondents' opinions.

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 introductory 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. The Edo state ministry of education should organize workshops/conferences to achieve modern workshop management practices for her principals and introductory technology teachers at least twice a year.
2. The techniques identified should be integrated into introductory technology curriculum in secondary schools in the state for principals and teachers use in the operation or running of workshop training administration.
3. Since no student can learn all he/she needs to know in any occupation only within the school system, opportunities should be provided for JSS students attachments in industrial or with master craftsmen in their chosen occupations to practice in the real job situations.
4. The school authorities should tighten up their security arrangement to safe guard technical tools and equipment in their school workshops.
5. The school authority should encourage the sharing of the technical tools with other vocational departments such as agricultural science, home economics and find arts when the need arises.
6. The government of Edo state should develop better vocational programmes and monitor it effectively to improve technological awareness and educe poverty in the state.

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