

## **EFFECTS OF ORGANIZING AND CONTROLLING OF METAL WORKSHOP EQUIPMENT ON ENTREPRENEURIAL SKILLS DEVELOPMENT AMONG POLYTECHNIC STUDENTS**

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### **ABSTRACT**

*The study investigated the effects of organizing and controlling of metal workshop equipment on entrepreneurial skills development among Polytechnic students. The study used two research questions. Survey research design was adopted, and the instrument was a questionnaire. The mean and standard deviation statistical tools were employed in analyzing the collected data. Metalwork teachers, instructors, and workshops assistants were used for the study selected through random sampling techniques, from the four technical colleges in Sokoto state. The study identifies many effects of organizing and controlling metal workshop equipment for fostering entrepreneurial skills and creative development in the students. The recommendation includes the government should cooperate with private sectors and the school authority, with the industries in developing and encouraging workshop practice for effective entrepreneurial skills and quality education for the development of the polytechnic students.*

### **INTRODUCTION**

Recognizing the importance of vocational and technical education and engineering related fields to prepare and trained students to earn a living in an occupation or employment. The Nigerian government in the national policy on education (NPC, 2014) out lined vocational technical education as that aspect of educational process involving, in addition to general education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding, and knowledge relating to economics and social life. The policy also outlined metal work, applied electricity, electronics, auto-mechanics, wood work, among others as the subjects to be studied at all levels of the educational instructions. Metalwork technology involves activities in an occupation that entail designing; products include metal furniture, automobile parts, home use metal products (Oranu and Ogwo 2002). From these definitions, one can now view metal work as types of education for preparing students for employment and be self-reliant. It supports professional career development to meet the challenge in the world of work.

However to acquire the practical skills as well as the basic knowledge that would facilitate effective entrepreneurial skills and competencies would not have been achieved, without the provision of proper manipulating skill oriented instructional facilities in a conducive learning environment. According to Olaitan, Nwachukwu, Ibgo, Onyemachi, and Ekong, (1999), the learning environments for the skill acquisition which include, class rooms, workshop/laboratories, where the students could practice, demonstrate and study must be well organized, planned and maintain for effectiveness. It is observed that workshop activities of any vocational and technical education program determine the educational advancement, skill acquisition and competency of its students. That is to say, workshops and laboratory properly

organized and control would automatically become a conducive learning environment where students learn various skills in technology for the future job. As viewed by Nwachukwu (2006), in metal workshops, powered machine tools and tools are properly organized for different functions, which need to be properly controlled. He added that metal workshops with the necessary equipment in the polytechnics are arranged and monitoring for effective practical training, to enable the students to acquire and develop skills and competencies in the individuals.

It is equally important to note that an entrepreneur is a person that create and develop new business. This is in view of Praag cited by Abdul Karim (2012), who concluded that for one to be a successful entrepreneur one must be aggressive, be competitive, be goal oriented, make decisions be an achiever very early in life, be a loner in the final decision, put family and friends second to business among others. Entrepreneurs discover new opportunities ways of delivering services and enhancing on products to meet the present and future consumer's challenges.

Moreover, the survival of an occupation depends to a large extent on how innovative an entrepreneur is. It is how ever observed that being technologically educated does not make one gainfully employs or entrepreneurs. This is because the world of work today needs an experienced, competent and specialized human being capable of learning and understand the sophisticated technology of today. It is equally right to say, the effectiveness of any workshop activities in meeting its specific functions or desirable outcome would require adequate organized and control of the tools and equipment.

## **PURPOSE OF THE STUDY**

The main purpose of this study is to identify the effects of organizing and controlling of metal workshop equipment on entrepreneurial skills development among the Polytechnic students.

## **RESEARCH QUESTIONS**

The research questions, which guided the study, include:

1. What are the ways of effective organizing of metal workshop equipment for entrepreneurial skills development among students?
2. What are the ways of effective controlling of metal workshop equipment for entrepreneurial skills development among students?

## **METHODOLOGY**

Descriptive survey research design was adopted for the study. As according to Ezeji (2004) viewed survey research design as one who studies large or small population by selecting and analyzing data collected from the group through the use of a questionnaire. The design is appropriate as the study sought representative views of metalwork teachers and workshop assistants. A total of seventy-seven (77) teachers and workshop assistants drawn from the four technical colleges in Sokoto state were used for the study. Since the population is small, all the population was covered.

The instrument for data collection on the effects of organizing and controlling metal workshop equipment on entrepreneurial skills development among the Polytechnic students is a questionnaire.

The instrument consisted of five sections ‘A’ dealt with the effective ways of organizing metal workshop equipment for skills development among students and contain 25 items section ‘B’ sought information on the effective ways of controlling metal workshop equipment for entrepreneurial skills development among students. The questionnaire was developed on a five - point Likert rating scale. Strongly Agree (SA) = 5 point; agree (A) = 4 points; Undecided (U) = 3 points; Disagree (D) = 2 points and strongly disagree (SD) = 1 point.

The instrument was face validated by three lectures in the department of vocational teacher education, University of Nigeria, Nsukka. Their critique suggestions and recommendations were used to make a final amendment to the instrument before administering it to the respondents.

### **Method of Data Collection**

The researcher and research assistant administered the instrument to the respondents. The entire questionnaire was completed and handed over to the investigators.

### **Method of Data Analysis**

The data were analyzed using mean (X) and standard deviation (SD) to answer the research questions. Any item with an average above 3.50 was taken as agreement while items with a mean value below 3.50 were regarded as disagreement. Thus mean value of items with 3.50 was taken as undecided.

## **RESULTS**

Results of the study were presented based on the research questions. Table 1 present data elicited by research question 1.

Table 1: effective ways of organizing metal workshop equipment for entrepreneurial skills development among students.

SN	Item	$\bar{X}$	SD	Rmks
1	Effective laboratory organization recognizes the number of students to practice in	3.88	0.76	Agree
2	An effective workshop organization requires order to observe challenges for learning	3.79	0.87	Agree
3	In organizing workshop equipment, there is need for the review and goals of the program	4.16	0.73	Agree
4	Provision of the list and arranging the learning activities, which are meant to take place in the workshop.	4.19	1.05	Agree
5	Examining the equipment and materials necessary for the projected learning activities.	4.43	0.47	Agree
6	Determine and arrange for appropriate boundaries of each equipment and general tools cabinet with workbench.	4.22	0.51	Agree
7	Arrange tools and equipment according to their sizes and color for ease of reference	4.37	0.72	Agree
8	Identifying new tools and equipment availability and condition.	4.70	0.52	Agree
9	Arrange work area and storage space to facilitate students work performance	4.16	0.54	Agree
10	A Provision of Standard Safety precautions should be established	4.00	0.76	Agree
	<b>Cluster mean</b>	<b>4.42</b>	<b>0.84</b>	



As shown in table 1, shows that all the respondents agreed with all the items in the questionnaire. Items 4, 5, 7 and 8 recorded greater response with a corresponding mean rating of 0.73, 1.05, 0.72 and 0.52 respectively. These indicate that these are the possible practical ways of organizing metal workshop equipment for entrepreneurial skills development among students.

Table 2: Effective ways of controlling metal workshop equipment for entrepreneurial skills development among the students.

S/N	Item	$\bar{X}$	SD	Remarks
1	Provide technical assistance on ways of handling tools and equipment	3.63	0.97	Agree
2	Maintain a sign-in and sign-out for all workshop users.	4.57	0.52	Agree
3	Review and re order at least once per term of consistently used tools and equipment	4.08	0.63	Agree
4	Manage budgets and accounts for suppliers to tools and equipment.	3.77	0.73	Agree
5	Adequate maintenance culture of the tools and equipment is needed	3.70	0.81	Agree
6	Restriction of the tools and equipment of the workshop to other users	4.45	0.65	Agree
7	Workshop assistants should maintain a tracking system for outside works going on in the workshop	3.88	0.76	Agree
8	Lost or damaged tools should be replaced for continuity of program	4.32	0.52	Agree
9	Maintain equipment in good operating condition and arrange for external servicing when required.	4.16	0.73	Agree
10	Careless loss of tools and materials due to pilfering or vandalism must constantly be checked	3.79	0.84	Agree
<b>Cluster mean</b>		<b>4.39</b>	<b>0.54</b>	

The data presented in table 2 indicates that all the items relating to effective ways of controlling metal workshop equipment for entrepreneurial skills development among students. Using the cut-off point of 3.50 as a benchmark, the data suggest that the whole items were agreed.

**DISCUSSION OF FINDINGS**

Data in Table 1 shows the suggested way of active organization of metal workshop equipment for entrepreneurial skill development among the students. All the respondents agreed with all the items. The result of the analysis revealed that there are many effective ways of organizing metal workshop equipment. These include the items with greater responses by their similar mean ratings. These items focus on the provision of the list and arranging the learning activities, which are made to take place in the workshop; examining the equipment and materials necessary for the projected learning activities. This also includes arranging the tools and equipment according to their size and color for ease of reference and identifying new tools and equipment availability and conditions.

The data in table 2, revealed the effective ways of controlling metal workshop equipment for entrepreneurial skills development among the students. Mean rating responses for items 2, 6, 8 and 9 have greater responses from the respondents. These items focus on



maintaining sign-in, and sign-out for all the workshop users; restriction of the tools and equipment of the workshop to other users; and loss or damage tool should be replaced for continuity of programme also maintaining equipment in good operating condition and arrange for external servicing when required. These are in accordance with suggestion of Olaitan et al (1999), which lost, damaged tools should be replaced for continuity of programme, careless loss of tools and materials due to pilfering, or vandalism must be constantly checked.

### **RECOMMENDATION**

There is no doubting about the fact, a well-organized and controlled tools and equipment in a conducive learning environment (workshop), would provide a favorable avenue where entrepreneurial skills and knowledge of students can be developed. Based on the findings of the study and subsequent discussions of findings, the following recommendations were made:

1. The higher ministry of education should look into re-organizing the metal workshop in the polytechnics to meets the presents challenges of attaining the objectives of science and technology stated in the national policy on education.
2. The federal government of Nigeria should organize and send professional teachers and workshop assistance for in-service training in the industries, to improve their skills and knowledge in managing workshops in the polytechnics.
3. Manufacturing industries and companies should render assistances regarding advice necessary in organizing and controlling the available equipment in the workshops these could be in the way of cooperative programme between the industries and the schools. As this will enable the teachers and workshop assistants updates their knowledge and skills for the dynamic science and technology today.

### **CONCLUSION**

The following conclusion was made base on the findings of the study; effective ways of organizing metal workshop equipment for entrepreneurial skills development among the students of Polytechnic are in the area of arranging the equipment and tools to accommodate an expanded enrollment of students and technological advancement. This is to say recognizing the number of students to practice in the workshop and provision of adequate supervision of the equipment and students practicing in the workshop. Similarly on the effective ways of controlling metal workshop equipment for entrepreneurial skills development among the students of Polytechnic are in the areas of maintaining a complete inventory of tools and equipment at the end of a practice or training. Maintaining limited access to tools when the users are too vast and dangerous. Also, the instructors and workshops assistants should supervise the learning activities and access to equipment when work is more of personal on nature.

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