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EFFECTS OF TEACHING BASIC SCIENCE ON YOUTHS' PERFORMANCE IN SKILLS ACQUISITION PROGRAMME IN EKITI STATE

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Abstract

The study sought to evaluate the effects of teaching basic science on skill acquisition. The purpose was to determine what effect the knowledge of basic science would have on in skills acquisition among youth in Nigeria. The study made use of quasi-experimental research design. The sample consisted of eighty youths chosen from two acquisition centres in Ekiti State. The two centres were randomly selected. Two research hypotheses were generated and two instruments were

constructed by the researcher which include; Basic Science Achievement Test (BSAT) and Skill Acquisition Scoring Sheet (SASS). Data collected through the instruments were analysed using mean and t-test at 0.05 level of significance. The result of the study show that there was a significant difference in the performance of youths taught basic science and those not taught basic science in skill acquisition. Based on the findings, it was therefore recommended that youth should be taught basic science in order to enhance their achievement in acquisition of skills.

Key Words: Skill acquisition, Performance, Youth, Acquisition centre and Determinant

Introduction

Evidence abound in the society that Science and Technology is a vehicle for all-round development of any nation. Therefore, to a very great extent, the level of the technological development of any nation may determine the standard of living of the citizen of that nation. Due to this, any nation that wishes to be recognized globally must ensure that she encourages Science and Technology.

Science is the study of nature and environment through which people can develop both enquiry and disciplined logical power of thought. It has been the key to technological take off and has played a vital role in improving the lots of mankind through agriculture, transportation, communication, medicine and others. A scientifically literate society should be the one in which citizens possess curiosity, manipulative ability to plan, design and conduct investigations. The teaching of science thus places greater emphases on the process skills acquisition than learning of scientific facts (National Teacher Institute 2011). The understanding of science helps man to know more about the universe. Without the application of science, it would have been impossible for man to explore the other planets of the universe. By and large, the present trend of development is geared towards technological advancement and this cannot be achieved without due consideration of the status of Science teaching in both junior and senior secondary school levels.

The importance of practical work in Science is widely accepted and it is acknowledged that good quality practical work promotes the engagement and interest of students as well as developing a range of skills, Science knowledge and conceptual understanding. Despite the utilitarian value of science in technological advancement. Lack of practical activities in science has resulted in poor manipulation and observation skills (Adepoju, 2002).

Skills simply mean the ability to do something well, usually acquired through training and experience or the competence to perform a given task. Skills are therefore best acquired in the course of activities and mastered with a varying degree of precision depending on the practice done (Omiko, 2015).

Basic science involves the study of elementary biology, anatomy, earth/solar system, ecology, genetics, chemistry and physics as a single science subject in the Junior Secondary school. The definition of Basic Science as was given by Omiko (2015) as a science in which concepts and principles are presented so as to express the fundamental unity of scientific taught and avoiding premature or undue stress on the distinction between various scientific fields.

Basic Science and Technology Curriculum. (2012), which specifies that aims of Basic Science which is directed at enabling students who are exposed to it, to acquire the following skills:

1. Observe carefully and thoroughly
2. Report completely and accurately what is observed.
3. Organise information acquired
4. Generalizing on the basis of the acquired information
5. Predicting as a result of the generalization
6. Designing experiments (including control where necessary) to check predictions.
7. Using models to explain phenomena where appropriate; and
8. Continuing the process of inquiry when new data do not conform to predictions.

Gender is also implicated in students' achievement in sciences. The issues of gender and gender stereotyping permeate every aspect of human endeavour. Okeke (2007) observed that the consequences of gender stereotyping cut across social, economic, political and educational development especially in the areas of science and technology. To Okeke, gender refers to the socially, cultural constructed characteristics and roles which are ascribed to males and females in any society. Gender is major factor that influences career choice and subject interest and students. Okeke (2007) described the male attributes as bold, aggressive, tactful, economical, use of words, while the females are fearful, timid, gentle, dull, submissive and talkative.

In Nigeria, and perhaps he whole of Africa, gender bias is still prevalent (Arigbabu & Mji, 2004). It is common to see gender stereotypes manifested in the day to day life of an average Nigerian.

Purpose of the study

The purpose was to determine what effect the knowledge of Basic Science would have on performance in skills acquisition among youths. Also to examine the effects of gender on performance in skill acquisition among youths in Ekiti State.

Research Hypotheses

Based on the stated problem, the following null hypotheses were postulated and tested in the course of the study:

(ii) There is no significance difference in the performance of youths exposed to Basic
Science and those were not exposed to basic science?

(i) There is no significant effect of gender on youths' achievement in skill acquisition?

Methodology

The study adopted quasi-experimental pre-test and post-test research design (one experimental group and one control group).The base line of the knowledge of the youths would be established by pre-test, while post-test after the treatment would be used to measure performance. The population of the study consisted of 4,200 youths of skill acquisition centres in Ekiti State. The sample consisted of eighty respondents chosen from two acquisition centres in Ekiti State. Purposive sampling technique was used to select centres that were considered eligible to participate in the study, to be eligible, the centres must have: both male and female youths and graduate teachers in integrated science.

Two research instruments were developed by the researcher tagged: Basic Science Achievement Test (BSAT) and Skill

Acquisition Scoring Sheet (SASS). The face and content validity of the instruments were done by the experts in the field of test and measurement, skill acquisition and science education. The corrections and observations were taken into consideration before the instruments were administered on the respondents. The reliability of the instruments (BSAT and SASS) were first determined through the test re-test procedure, where the final version of the instruments were administered on forty youths (20 males and 20 females) randomly selected from two centres that were not used for the study. After two weeks, the same instruments were re-administered on the same set of youths. The reliability coefficients of 0.72 and 0.68 respectively were obtained thereby making the instruments to be suitable enough and adequate for the study. The postulated hypotheses were subjected to inferential statistic of t-test analysis at 0.05 level of significance.

Results and Discussion

Table 1: t-test analysis of youths taught with basic science in skill acquisition and those not taught Basic Science.

Group	N	Mean	Std. Deviation	df	t_{cal}	t_{table}
Group taught with Basic Science	40	30.20	4.75			
Group not taught with Basic Science				78	12.59	1.66
	40	17.65	4.15			

Table 1 revealed that t_{cal} (12.59) was greater than t_{table} (1.66). Hence, the null hypothesis was rejected. This implies that there was a significant difference between the performance of youth taught with Basic Science and the group not taught basic science.

$H0_2$: There is no significant effect of gender on youths' performance in skill acquisition?

Table 2: t-test analysis of the of male and female taught with Basic Science in skill acquisition.

Sex	N	Mean	Std. Deviation	Df	t_{cal}	t_{table}
MALE	20	73.45	6.73	38	0.15	1.67
FEMALE	20	73.10	7.98			

Table 3 revealed that t_{cal} (0.15) was less than t_{table} (1.67). Hence, the null hypothesis was not rejected. This implies that there was no significant difference between the performance mean scores of male and female students taught with basic science.

Discussion

The study also showed that there was a significant difference between the performance of youth taught with Basic Science and the group not taught Basic Science skill acquisition. This also was supported by Mustapha (2009) and Danmole (2011) that the development of any

nation begins with science which is an instrument of psychomotive domain of any students.

The study showed that there was no significant difference in the performance mean male and female students taught with basic science in skill acquisition. This claim was also in agreement with Oyedeji (2006) which claims that gender is not an identifiable factor affecting the learning of any concept.

Recommendations:
Based on the findings, it was recommended that: Government should endeavour to employ Basic Science teachers into their skill acquisition centres. Skill acquisition curriculum should be incorporated with the teaching of selected topics in Basic Science in order to improve the manipulative and inquiry spirit of trainee. Trainers in the society should be encouraged to learn basic science in continuous education centres to bust their competency in skill acquisition.

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