



**EFFECT OF GOAL ORIENTATION TEACHING APPROACH ON SECONDARY SCHOOL STUDENTS
PERFORMANCE IN BASIC TECHNOLOGY IN UDI EDUCATION ZONE OF ENUGU STATE**

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Abstract

The purpose of this study was to determine the Effect of Goal Orientation Teaching Approach on Secondary School Students Performance in Basic Technology in Udi Education Zone of Enugu State. Two research questions and three hypotheses guided the study. Pretest-posttest non randomized control group design was adopted for the study. The study was conducted in Udi Education of Enugu State, where a sample of (261) junior secondary school two (JSS 2) students was drawn from 6 intact JSS2 classes in 3 secondary schools. The sample was made up of (128) students in the experimental group and (133) students from the control group. Instrument used for data collection was Basic Technology Achievement Test (BTAT). BTAT was made up of 35 items. It was validated by three research experts. BTAT gave a reliability coefficient of .69 obtained using Kudar Richardson 20 Formulae. Research questions were answered using mean and standard deviation. Hypotheses were tested using Analysis of Covariance (ANCOVA). Major findings of the study showed that students taught Basic Technology with Goal Orientation Teaching Approach achieved more in Basic Technology than their counterparts taught same topics with expository method. Urban and Rural secondary school students' taught Basic Technology with Goal Orientation Teaching Approach did not differ significantly in their mean achievement scores. It was recommended that Goal Orientation Teaching Approach be used in teaching secondary school Basic Technology.

Keywords: Goal Orientation, Teaching Approach, Secondary School, Students Performance, Basic Technology

Introduction

Basic technology as presently constituted is an integrated pre-vocational course comprising workshop safety rules and regulations, identification/properties of materials (wood, metals, ceramics, plastics, rubber), geometrical drawing, building work, tools and machines, maintenance (periodic, fault detection), energy and power, metal work hand tools, wood work machines, information and communication technology (ICT) et cetera (Federal Republic of Nigeria, 2013). Teaching and learning of basic technology in Nigeria is designed to give the young Nigerians technological knowledge and skills early, having been aware that Nigeria is being challenged by new technical ways of doing things in industries, businesses, sports and politics (Akpan and Ikelede, 2013). This underscores the need to improve basic technology in teaching, learners' knowledge and skills development, achievement through the use of adequate teaching strategies so as to remedy the present status of students' poor achievement in basic technology.

The worrisome deteriorating state of students' of poor achievement in secondary school basic technology cannot be better tackled at any other time than now. Consistently, research evidences have continued to show students' poor achievement in basic technology. Evidently, research results have continued to implicate teaching methods as a major factor causing this ugly menace. A lot of innovations have consequently been introduced as teaching methods for secondary school basic technology; these include discovery, expository, laboratory, concept mapping, computer-aided instruction, etc. Yet there seems to be no significant improvement in students' achievement in basic technology. This suggests the need to look for new methods.

Note-worthy is the fact that educators and researchers have mainly recommended the use of effective teaching methods which is in tune with modern scientific and technological dispensation of problem solving as a remedy to students' poor achievement in secondary school basic technology. Undoubtedly, a goal orientation teaching approach is one of such. Goal orientation is an individual disposition toward ability in achievement settings. The earliest conceptualizations of goal orientation were proposed in the 1970s by the educational psychologist J.A. Eison. Eison opined that students who approached college as an opportunity to acquire new skills and knowledge possessed a learning orientation while students who approached college with the goal to exclusively obtain high grades possessed a grade orientation. It is therefore expected that goal orientation will naturally promote students achievement in secondary school subjects generally and basic technology in particular. Contrarily, as effective as goal orientation teaching approach sounds in teaching and learning, research evidences on students' performance in basic technology when taught with goal orientation teaching approach showed no definitive conclusion on its efficacy.

Educators and researchers vary in their findings and opinions as to whether location affects students' achievement in secondary school basic technology or not. Location in this context would be categorized into two viz; urban and rural. Undoubtedly, urbanization and rural development still pose great challenges to the government of the third world countries such as Nigeria. In the urban areas, barely all the basic infrastructures are inadequate in supply, hence, the struggle for and consequent over stretching of the available few. Therefore, in school system, the story has remained that of over-crowded classrooms, insufficient and obsolete equipment, absenteeism occasioned by the use of school children for street trading even during the school hours, truancy on the part of the teachers as they hassle to survive the high cost of living, etc. The emergency of urban congestions have worsened things and created more unmanageable social problems. The problems of urbanization are many and they constitute a big threat to teaching and learning in our school. This is because learning must take place in very conducive environments.

On the other hand, the situation in the rural areas is not in any way better. Although the rural locations may never be known for over-population, they have definitely suffered neglect and abandonment. Hence, schools in the rural areas are marked by dilapidated buildings, where they even exist at all and lack of necessary equipments to enhance teaching and learning. Many rural schools have been deserted by teachers who usually seek transfers to urban areas. All these largely tell on the learners who are the most vulnerable. Thus, a study of this nature is most timely as it also seeks to investigate whether location can affect teaching and learning of basic technology with goal orientation teaching approach.

Statement of the Problem

Effective use of goal orientation teaching approach help teachers to diagnose students' strengths and weaknesses (abilities) toward achieving set out goals and corrective measures. Among other things, goal orientation teaching approach facilitates the exposition of problem solving strategies. However, as effective as goal orientation teaching approach sounds in teaching and learning, research evidences on students' performance in basic technology when taught with goal orientation teaching approach showed conflicting findings. This also applies to the effectiveness of goal orientation teaching approach in the teaching of basic technology in urban and rural secondary schools. While some researchers such as Mbu (2012) and Ika (2013) found goal orientation teaching approach to have promoted teaching and learning of basic technology, other empirical studies such as Clauss (2012) and Njom (2013) still claim that goal orientation teaching approach inhibits effectiveness of teaching and learning

of basic technology in urban and rural secondary schools.

Hence, there is still no definite conclusion on the students' performance in Basic technology in urban and rural secondary schools when taught with goal orientation teaching approach. It therefore becomes necessary to conduct more investigations into the effect of goal orientation teaching approach on students' performance in Basic technology. This need becomes more necessary in Enugu State where despite her (Enugu state) position as the capital of the defunct eastern region (now south-east and south-south geopolitical zones) Enugu state is yet to attain the desired satisfactory educational height, (Njom, 2013).

Purpose of the Study

The purpose of this study was to investigate the Effect of Goal Orientation Teaching Approach on Secondary School Students Performance in Basic Technology in Udi Education Zone of Enugu State. Specifically, the study aimed at investigating the Effect of Goal Orientation Teaching Approach on junior secondary school two (SS2) students';

- i. achievement in Basic Technology
- ii. achievement in Basic Technology with regards to location of their schools

Research Questions

The following research questions guided the study

1. What is the mean Basic Technology achievement scores of students taught with Goal Orientation Teaching Approach and their counterparts taught with expository method?
2. What is the mean Basic Technology achievement scores of urban and rural secondary students taught with Goal Orientation Teaching Approach?

Hypotheses

The following hypotheses were formulated and tested at .05 level of significance

1. There is no significant difference between the mean Basic Technology achievement scores of students taught with Goal Orientation Teaching Approach and their counterparts taught with expository method.
2. There is no significant difference between the mean Basic Technology achievement scores of urban and rural secondary school students taught with Goal Orientation Teaching Approach.
3. There is no significant interaction between teaching approach and school location on students' achievement in Basic Technology.

Methodology

Quasi-experimental design was the research design adopted in the conduct of this investigation. Specifically the design was a pretest–posttest, non-equivalent control group design. The area covered in this study was Udi Education Zone of Enugu state. From were three (3) secondary schools were randomly drawn. Two intact JSS2 classes were also randomly drawn from each of the (3) secondary schools, hence, a total of six (6) intact JSS2 classes were used for the study. All the students in the (6) intact classes, numbering (261) served as sample for the study. The sample was made up of (128) students in the experimental group and (133) students in the control group. Also the sample was made up of (65) urban and (63) rural secondary school students in the experimental group.

Basic Technology Achievement Test (BTAT) was used to collect achievement scores, (pre and post). BTAT was made up of thirty (35) items. Each item had four options lettered A-D. Only one of the options was the correct answer. BTAT was validated by three research experts. After necessary corrections as directed by the experts, BTAT was confirmed to be valid. BTAT yielded a reliability coefficient of .69 obtained using Kudar Richardson 20 formular.

Experimental Procedures

The researcher trained the (3) regular Basic technology teachers in the (3) secondary schools used for the study for a period of two weeks on the use of Goal Orientation Teaching Approach. Fore-most, the BTAT was administered to all the subjects of the study to collect the pre-treatment achievement scores. Thereafter, the treatment was administered for a period of six weeks. The experimental group in each school was taught the selected basic technology topics using Goal Orientation Teaching Approach while the control group in each school was taught the same topics using expository method. All topics were drawn from JSS2 basic technology scheme of work. At the expiration of the treatment period, the BTAT was re-arranged and administered to all the subjects of the study to collect the post-treatment achievement scores.

Research Questions were answered using mean and standard deviation. Test of hypotheses was done with Analysis of Covariance (ANCOVA) at .05 level of significance.

Results

Research Question One

What are the mean Basic Technology achievement scores of students taught with Goal Orientation Teaching Approach and their counterparts taught with expository method?

Table 1: Mean achievement scores and standard deviations of students in the experimental and control groups in both pretest and posttest

Group	n	Pretest Mean	Standard Deviation	Post Test mean	Standard Deviation
Experimental	128	19.8	10.2	83.7	7.03
Control	133	21.1	9.8	52.4	39.15

The pretest mean achievement score and standard deviation of the experimental group were 19.8 and 10.2 respectively while those of the control group were 21.1 and 9.8 respectively. However, the posttest mean achievement scores and standard deviation were 83.7 and 7.03 respectively for experimental group while 52.4 and 39.15 were those of control group. Apparently both groups scored poorly in the pretest and the standard deviations of 10.2 and 9.8 for both groups were high showing that there were more extreme values; only a few scores clustered around the mean, therefore the mean for both groups in the pretest were not very reliable.

However, in the posttest, experimental group achieved higher with a mean of 83.7 and lower standard deviation of 7.03 unlike the control group which achieved lower with a mean of 52.4 and a higher standard deviation value of 39.15. Comparing with the pretest data, learning took place in both groups but better in experimental group also the mean score for experimental group was more reliable than that of control group as revealed by the standard deviation values of both groups. There were more extreme scores in the control group.

Research Question Two

What are the mean Basic Technology achievement scores of urban and rural secondary school students taught with Goal Orientation Teaching Approach?

Table 2: Mean achievement scores and standard deviations of students in the urban and rural schools in both pretest and posttest

Group	n	Pretest Mean	Standard Deviation	Post Test mean	Standard Deviation
Urban	65	18.6	6.11	72.5	4.01
Rural	63	18.1	6.06	73.1	4.20

The pretest mean achievement scores and standard deviations were 18.6 and 6.11 for urban students and 18.1 and 6.06 for rural students respectively. However, the posttest mean achievement scores and standard deviations were 72.5 and 4.01 for urban students and 73.1 and 4.20 for rural students. Apparently there is no tangible difference, the standard deviations were very low for both groups, and hence both mean were reliable.

Hypothesis 1: There is no significant difference between the mean Basic Technology achievement scores of students taught with Goal Orientation Teaching Approach and their counterparts taught with expository method.

Hypothesis 2: There is no significant difference between the mean Basic Technology achievement scores of urban and rural secondary school students taught with Goal Orientation Teaching Approach.

Hypothesis 3: There is no significant interaction between teaching approach and school location on students' achievement in Basic Technology.

Table 13

Source of Variance	Sum of squares	Df	Mean squares	F-calc.	Level of significance	Decision
CO-variates	21671.411	1	21671.411	189.212	0.000	S
Pretest	21671.411	1	21671.411	189.212	0.000	S
Main effects	66142.334	2	23104.163	191.332	0.000	S
Methods	59441.716	1	5944.716	662.14	0.000	S
Locations	5227.853	1	2588.106	32.114	0.000	S
2-Way interaction	119.213	1	99.124	1.178	0.357	NS
Methods/Location	119.213	1	99.124	1.178	0.357	NS
Explained	85349.601	4	15128.125	157.362	0.000	S
Residual	18654.911	261	91.637			
Total	104004.512	265	526.714			

S = significant, NS = Not significant at 0.05 level of probability

The result above shows F-calculated of 189.212 for pretest, f-calculated of 191.332, 662.14 and 32.114 for main effects, methods and location respectively all these indicate significant effects. However, with an f-calculated of 1.178 for interactions between methods and location, there is no significant effect.

Consequently, hypothesis one is rejected as stated because there is significant difference between the mean Basic technology achievement scores of students taught with Goal Orientation Teaching Approach and their counterparts taught with expository method in favour of the goal orientation class. However hypothesis two is not rejected as stated there is no significant difference between the mean Basic technology achievement scores of urban and rural secondary school students taught with Goal Orientation Teaching Approach. Similarly, hypothesis three is not rejected as stated because there is no significant interaction between teaching approach and school location on students' achievement in Goal Orientation Teaching Approach.

Summary of Findings

The results presented in this chapter revealed the following:

1. There is a significant difference in the mean achievement scores of students taught Basic technology with Goal Orientation Teaching Approach and those taught with expository method. The difference is in favour of the Goal Orientation class.
2. There is no significant difference between the mean achievement scores of urban and rural secondary school students taught Basic technology with Goal Orientation Teaching Approach.
3. There is no significant interaction between Goal Orientation Teaching Approach and school location in students' achievement in Basic technology.

Discussions of Findings

Results presented in table one showed that both groups of students had close mean and standard deviation scores in the pretest, apparently showing that they had chances of achieving equally. However, after treatment the experimental group achieved far higher, with a lower standard deviation. Table 3 further revealed a significant difference in the achievement of students in both groups in favour of the experimental group. Evidently, these results implicated method of teaching as a major factor affecting students' achievement in Basic technology. This finding supports the recommendations of Clauss (2012) and Ika (2013) for the use of effective teaching method which is in tune with modern scientific and technological dispensation as a remedy to students' poor achievement in basic technology, (Ogbu, 2006). This finding was also supported by the findings of

Randy and Trundle (2008) and Zacharia and Anderson (2003) who reported the usefulness of Goal Orientation Teaching Approach in teaching and learning. Conversely, this finding contradicts the findings of Marshal and Young (2006) as well as weight and Abd-El-Khalick (2007) who reported in their separate studies that Goal Orientation Teaching Approach hindered and restricted students learning.

The design and effective use of the teaching method in this study may have accounted for the result so-achieved. Table 2 and 3 show interesting results on influence of school location. Table 2 showed that urban and rural schools students taught basic technology with goal orientation teaching approach achieved equally. Table 3 show that there existed no significant interaction between method of teaching and location in students' achievement in Basic technology. These results agree with the findings of Mpegi (2001), Mbaegbu (2002), Stuz (2005) and Nwoye (2005) that there is no significant effect or interaction between location, teaching methods and students' achievement in basic technology. Conversely, the results contradicted the claims of Nduka (2001), Oluremi (2001), Banjo (2004) and Okeke (2005) in their various studies where they held that location is a major player in students' achievement in secondary school basic technology. Possibly, manipulation of extraneous variables may have accounted for the conflicting results.

Recommendations

Based on the findings of this study, the following recommendations are deemed necessary:

1. Use of Goal Orientation Teaching Approach for teaching secondary school basic technology should be adopted by teachers in all secondary schools in Enugu State and beyond.
2. Periodic workshops and seminars should be organized for basic technology teachers on the proper use of Goal Orientation Teaching Approach for teaching basic technology.

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