



**EVALUATING THE ROLES OF PHYSICS TEACHERS TOWARDS
ENHANCING STUDENTS PARTICIPATION IN CLASSROOM: A CASE STUDY
OF ONITSHA EDUCATION ZONE**

by
Obiadazie Sabina Chizoba
Department of Physics
Nwafor Orizu College of Education Nsugbe
Anambra State-Nigeria

Abstract

This study was undertaken to evaluate the roles of physics teachers toward enhancing students' participation in classroom activities. A survey research design was adopted to elicit information from ninety- six physics teachers from thirty- two secondary schools in Onitsha Education zone. Four research questions and one null hypothesis guided the study. The study focused on four domains of activities which are teaching style, quality of teaching, kinds of decisions based on homework performance and kinds of feedback based on assessment outcomes. Valid and reliable questionnaire structured in a four-point rating scale were used to elicit information from the respondents and reliability coefficient of 0.76 was established using split - half method. In analyzes, mean was used to answer the research questions and Z- test was adopted to test the null hypothesis at 0.05 level of significance. The results of the study indicated that there is no significance difference on the roles of male and female physics teachers toward enhancing students' participation in classroom activities. Thus, this paper recommends that physics teachers should encourage students to participate in classroom activities, give feedback of student's performance, engage students in experiments as well as home work.

Keywords: Evaluating, Physics Teachers Roles, Students Participation & Classroom.

Introduction

The teacher with his professional ability is a relevant factor in training and preparation of didactic and methodical plans, organizes and carries out work on student learning. Educational process and people as social beings reciprocally is related to one another from the existence of man or mankind and so will continue to remain. This reveals that human and society development depends on

education and education as processes which enable the development of knowledge, skills and human experience. To achieve this development, there is need to have a leader of the educational process that will plan, manage and evaluate his and others work so as to educate and teach them and there is no doubt that this is the teacher.

The classroom activities are the process

that brings the curriculum into contact with students and through which educational goals are to be achieved. The quality of classroom teaching is a key to improving students' learning. Findings of research suggested that several classroom instructional activities were associated with achievement and noted that the ways in which instructional activities are presented in classroom context affects students' achievement (Anderson and Brophy 1998). Moreover, Sommer (1999), found that quality of instruction influences achievement at the class level. Instructional activities in class include variables that describe aspects of classroom instruction such as quality of teaching style, teaching style and classroom assessment environment.

The teaching context is established through preconceptions held by the teacher about the process of learning and how that might be facilitated (Mouly 1982). It has been found that quality of teaching is a significant predictor of students' achievement even after controlling for effects of students' characteristics (Sommer 1999). In addition, Cavas (2002), found that quality of teaching did not have statistically significant effect on achievement at classroom level.

An important part of any instructional setting is the teaching style. Research results suggested that teaching style exerted effects on student achievement that were independent of students' characteristics (Smith 1987). Both teaching styles (teacher and learner - centered) recognize the students as a key factor in improving students' achievement.

The teacher – centered style places control for learning in the hands of the teacher who decided what students would learn and how the teacher uses his expertise in content knowledge to help learner make connections. Teacher provides a variety of

instructional methods and techniques for helping learners construct their learning and develop a system for applying knowledge and theory (Brown, McNamara , Olwen , Jones , 2003). Cooper (1998), found that students learn more in classes where they spend most of their time being taught or supervised by teachers, rather than working on their own.

The classroom assessment environment has been defined as the context created for learners by several aspects of teacher's use of formative and summative evaluations of their work and assessment should as far as possible be integral to the normal teaching and learning programme. For instance, testing should be considered as an opportunity to learn (Anderson and Prophy 1998). Research has indicated that the amount of homework given by the teacher have great effect on students' achievement. For instance, Baumer (2002), showed that the frequency of homework assignments had a positive effect on achievement gains. The assignment of appropriate homework can stimulate independent engagement in learning tasks. According to Gerades (1991), textbook-based homework was associated with higher achievement. Feedback is required because students need information about their accomplishments in order to grow and progress. Feedback related to assessment outcomes helps learners become aware of any gaps that exist between their desired goal and their current knowledge, understanding skills and guides them through actions necessary to achieve the goal (Richard 1994).

Thus, the study was design to evaluate the roles of physics teachers toward enhancing student's participation in classroom activities which shall focus on four domains of activities, which are practiced in classroom thus: teaching style, quality of teaching, kinds of decisions based on homework performance, and kinds of feedback based on assessment outcomes.

Problem of the Study

The teacher education work is based on sincerity, passion, love for students but also in practicing the profession. Therefore, the teacher must have formed personality embodied with elegance, attractiveness, modesty and kindness, courtesy and attention to students. In the teacher education program, there should be no prejudice, insecurity and lack of confidence. The education program to gain success from teacher requires patience, thoroughness, skill and professionalism. Despite numerous commitments of teachers in the implementation of the teaching and educational component, the main role of the teacher is education. To successfully realize its educational work, the teacher should reflect the quality work, that is, to have the verified intellectual capacity, considerable pedagogical knowledge, complaisant practical realization of pedagogical work and commitment to proper teaching. Duty and moral obligation of teacher is the preservation of national and civic values. Available research findings attributed students' poor performance in physics to problem of inadequate training facilities that can bring about the best in the Nigerian child and lack of instructional materials (Adedayo, 2001); Poor teaching of physics because of its nature (Amoo, 2001), Poor environmental background, lack of requisite skills and lack of interest by the students. Enhancing students' participation in different domains of classroom activities is the work of a teacher and that is what necessitated the need for this study.

Research Questions

1. What are the roles of physics teachers as regards to teaching styles that will enhance students' participation in classroom activities?

2. What are the roles of physics teachers as regards to quality of teaching that will enhance the students' participation in classroom activities?

3. What kinds of decision based on home-work carried out by the physics teachers that will enhance the students' participation in classroom activities?

4. What kinds of feedback based on assessment outcomes made by the physics teacher will enhance the student's participation in classroom activities?

Research Hypothesis

H₀₁: There is no significance difference in the roles of male and female physics teachers toward enhancing students' participation in classroom activities.

Method

This study was undertaken to determine the roles of Physics teachers toward enhancing students' participation in classroom activities. A survey research design was adopted to elicit information from ninety-six physics teachers from thirty-two secondary schools in Onitsha Education zone. Four research questions and one null hypothesis guided the study. The study focused on four domains of activities which are practiced in classroom. The domains are teaching style, quality of teaching, kinds of decisions based on homework performance and kinds of feedback based on assessment outcomes. Valid and reliable questionnaire structured in a four-point rating scale containing 20 items were used to elicit information from the respondents and reliability coefficient of 0.76 was established using split - half method. In analysis, mean was used to answer the research questions and Z- test was adopted to test the null hypothesis at 0.05 level of significance.

Results
 Research Question 1: What are the roles

of physics teachers as regards to teaching styles that will enhance students' participation in classroom activities?

Table 1: Role of Teachers as regards Teaching Style

s/n	Item	SA	A	D	SD	N	X	Decision
	TEACHING STYLE							
1	Physics teachers should investigate whether students understand the previous learning.	34	42	13	7	96	3.07	Accepted
2	Physics teachers should teach students how to solve problems.	48	38	3	7	96	3.32	Accepted
3	Physics teachers should help students to learn physics concepts	42	50	3	1	96	2.76	Accepted
4	Physics teachers should ask the students what they know relating to new topic	38	42	7	8	96	3.16	accepted

From the result in table 1, it is indicated that when physics teacher helps the students by ascertain the level of their understanding of the previous learning, what they know about the new topic, helping them in understanding physics

concept as well as teaching them how to solve physics problems, it helps them in better understanding of physics and their participation. All the items have the mean above 2.50 which were all accepted.

Research Question 2

What are the roles of physics teachers as regards to quality of teaching that will enhance the students' participation in classroom activities?

Table 2: Roles of Physics Teachers as Regards to Quality of Teaching

s/n	Items	SA	A	D	SD	N	X	Decision
	Quality of Teaching							
1	Physics teachers should explain the reasoning	48	35	8	5	96	3.31	Accepted

	behind any idea							
3.	Physics teachers should assign students to text book homework	53	38	4	1	96	3.49	Accepted
4.	Physics teachers should assign students to experiments in small groups	32	28	12	24	96	2.71	Accepted
5.	Physics teachers should assign students to do individual project	52	44	-	-	96	3.54	Accepted

From table 2, virtually all the items have the mean above 2.50 which indicates that physics teachers' quality of teaching enhances students' participation and understanding in the classroom.

Research Question 3: What kinds of decision based on home work carried out by physics teachers that will enhance the students' participation in classroom activities?

Table 3: Decision based on Home Work Carried out by physics Teachers

s/no	items	SA	A	D	SD	N	X	Decision
	Kind of decisions based on homework performance							
1	Physics teachers should collect, correct and return homework assignment	42	49	3	2	96	3.36	Accepted
2	Physics teachers should include homework scores when finding the students' final grades	50	46	-	-	96	3.52	Accepted
3	Physics teachers should ask the students to correct their homework assignment in classroom	49	43	3	1	96	3.40	Accepted

From table 3, all the items have the mean score above 2.50 which indicates that the kind of decision taken by the physics teachers based on homework performance enhances students' participation in classroom activities.

Research Question 4

What kinds of feedback based on assessment outcomes made by the physics teacher will enhance the students' participation in classroom activities?

Table 4: Feedback Based on Assessment Outcome made by Physics Teachers

s/no	Domain and items' content	S A	A	D	S D	N	X	Decision
1	Kind of feedback based on assessment outcomes Physics teachers should give response to students' questions in class.	49	47	-	-	96	3.51	Accepted
2.	Physics teachers should provide feedback to students	35	49	4	8	96	3.16	Accepted
3.	Physics teachers should diagnose learning problems	38	32	18	8	96	3,04	Accepted
4.	Physics teachers should report to the parents on the academic progress of their children	40	56	-	-	96	3.42	accepted

From table 4, all the items have the mean above 2.50 which indicates that the kinds of feedback based on assessment outcomes made by the physics teacher enhance the students' participation in classroom activities.

Table 5: Decision table of z – test analysis of the mean responses of the roles of male and female physics teachers toward enhancing student's participation in classroom activities

Source of variation	N	X	SD	P<	DF	Z-cal	Z-crit	Decision
Male physics teacher	23	3.04	1.87					Accepted Ho
				0.05	94	1.03	1.96	
Female physics teacher	73	3.01	1.72					

Table 5 above showed that the calculated z-value is less than the critical value, that is $z\text{-cal.} (1.03) < z\text{-crit.} (1.96)$. Thus the null hypothesis is accepted. Hence, there is no significance difference in the roles of male and female physics teachers toward enhancing students' participation in classroom activities.

Discussion of Results

From table 1, it indicates that all the items have the mean above 2.50 which shows that physics teacher's style of teaching enhances the students' participation in the classroom.

From table 2, virtually all the items have the mean score above 2.50 which indicates that physics teacher's quality of teaching enhances students' participation in the classroom.

From table 3, all the items have the mean score above 2.50 which indicates that the kind of decision taken by the physics teachers based on homework performance enhances students' participation in classroom activities.

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Conclusion

This study shows that there are positive roles physics teachers play towards enhancing students' participation in classroom activities. The roles can be perceived through helping the students to understand the physics concepts, assigning of home works to students in groups and

individually, correcting and returning of assignments to students as well as diagnosing learning problems.

Recommendations

- a. Physics teachers should encourage students to participate in classroom activities.
- b. Physics teachers should help the students to learn physics concepts.
- c. Physics teachers should assign students to do small experiments and project.
- d. Physics teachers should collect, correct and return marked homework or assignments to the students.
- e. They should provide feedback to students and diagnose learning problems.

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