Repositioning Teacher-Learner Relationship for Optimum Fulfilment of the Nigerian Educational Policy

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Abstract

The purpose of the study was to identify key issues affecting patterns of teacher–pupils classroom relationship in fulfilment of some of the goals of the nation's primary education; laying a sound basis for scientific and reflective thinking; moulding the character and developing sound attitude and morals in the child; developing in the child the ability to adapt to his changing environment. To present a comprehensive picture of the quality of primary education so as to encourage the Government to prioritise expenditure on resources to improve education and to assess the impact of any interventions. Video and audio recordings of 148 lessons were analysed using systematic observation and multiple regression analysis. Findings revealed the domination of transmissional forms of teaching, providing little opportunity for pupils to question or explore ideas to help regulate their own thinking. There was a prevalence of teacher explanation, recitation and rote in the classroom, with little attention paid to securing pupil understanding. The research suggests managing the quality of classroom interaction will play a central role in improving the quality of teaching and learning through more effective school-based training.

Key words: *teacher-learner, teacher-learner relationship, Nigetian educational policy, classroom interaction*

Introduction

It is reasoned that pupils in primary schools still have a natural curiosity for science, but school teachers often lack the ability and confidence to develop this curiosity with exciting science lessons and hands-on activities. [Organization for Economic Cooperation and Development, (OECD, 2005)]. Many factors are thought to be responsible for poor interaction between the teacher and the learners. Greenwald, Hedge and Laine (1996) found a positive and significant effect of teacher's experience on learners performance. Hanushek (1997) did not find any result to support a relationship between teacher's experience and learner's performance. Hawkins, Stancavage and Dossey (1998) and Amusan (2014) disagreed with this, noting that although teaching experience may be related to learners achievement, the relationship may not be linear.

In most parts of the world, women and girls continue to be under-represented in fields of study and employment related to science (Amusan, 2011). Socio-cultural barriers were identified as being among the greatest impediment to women's access to science education. The ability of girls and women is often called into question: girls are discouraged from taking scientific and technical courses, since it is generally thought that they are too difficult and therefore appropriate only for men. These negative social attitudes create a lack of self-confidence among girls and women in their ability and motivation to opt for science. Among the fewer females who are in the field of science education, fewer still, see themselves as capable of teaching science effectively. Amusan and Odunuga (2012) noted that teachers' gender contributed positively to the attitude of teachers to the teaching of Science.

In many primary schools, each class has a teacher who stays with them for most of the week and will teach them the whole curriculum. At one end of the spectrum, each primary school teacher is

responsible for science instruction; at the other end, only science specialists can be adequately prepared to handle such a task (Schwartz & Gess-Newsome, 2008). Most primary school teachers come from non Science backgrounds, not having had specific professional training in Science, the teachers are then required to teach the subject for which they lack competence. Hawk, Coble, and Swanson in Alexander and Fuller (2004), found that students with mathematics teachers assigned infield (that is, mathematics teachers with major in mathematics) scored higher and had greater gains than students with mathematics teachers assigned out-of-field (that is, mathematics teachers who do not have mathematics as their subject major). Goldhaber and Brewer (2000) however found that students with teachers possessing degrees in mathematics had greater gains in achievement than students with teachers with non-mathematics degrees, but found no such results for science.

Time is one of the most challenging constraints a teacher faces in trying to achieve curricular goals and meet the needs of all pupils, while managing the administrative tasks that are a necessary responsibility of the job. That is, there is a relationship between the amount of time pupils are actively engaged in learning activities and their achievement, (Mastropieri & Scruggs, 2000). The ability of the teacher to organize or manage and thereby spend quality portion of the allocated time for instruction may therefore affect the achievement of the pupils. Most teachers schedule and allocate the appropriate amount of time for learning, but few teachers actually ensure that their pupils are engaged and actively occupied with activities geared towards the learning of the subject during the allocated time.

To teach all students according to recommended standards, teachers need to understand the subject matter deeply and flexibly so they can help pupils create useful cognitive maps, relate one idea to another, and address misconceptions. Teachers need to see how ideas connect across fields and to everyday life. From the definitions of Shulman (1987) and Ingersoll (1996), having quality teachers fundamentally involves having teachers with knowledge of content and pedagogical skills, amongst others. Quality teachers are experienced and have elaborate systems of knowledge of their subjects (Woolfolk, 2001; Slavin, 2003). A teacher who is not well grounded in his subject matter would not have the ability and confidence to transmit knowledge in the classroom. Knowledge of content must be balanced with a solid grounding in effective teaching strategies, especially when we hope that teachers will improve the performance of pupils who have been failing or struggling. Eby in Okpala and Ellis (2005) stated that quality teachers should use a wide variety of instructional methods, experiences, assignments and materials to ensure that learners are achieving all sorts of cognitive objectives.

The effective attitude and actions employed by teachers can ultimately make a positive difference on the lives of their pupils. Attitude of the teacher to Basic Science and Technology can also serve to encourage or discourage pupils. Teachers with positive attitude toward Science will encourage similar attitude in their pupils and vice versa. Teachers are expected to transmit the essence of scientific methods and to awaken the interest and enthusiasm of their pupils, but this would be difficult if they themselves are uncertain about the subject and their knowledge of it, some of which the pupils can sense.

Experience has shown that many primary school teachers talk down to their pupils rather than talk to them. Most of their pupils are actually scared of them. Many primary school teachers seldom realize that how they teach, how they behave and how they interact with pupils can be more paramount than what they teach. Teaching is an interaction course that takes place between the teacher and pupils. Darling-Hammond (2008); Gordon, Kane and Staiger (2006) believe that the teacher's relational quality with learners has an important role in effectiveness of his teaching and the standard for measuring the effectiveness of the teachers that is creating the learning. However, as important as this is, teacher factors which influence classroom interaction with the learners have not been ascertained.

Statement of the Problem

The prevailing low enrolment in Science and Technology related courses in tertiary institutions over time have been known to evolve from the poor background of learners in science education at lower levels of their education. Even though stakeholders in education had made efforts to improve its quality in terms of content delivery, by retraining the teachers in various workshops and seminars, yet there has been no remarkable improvement in the enrolment.

A number of researchers have argued that developing positive teacher-learner relationship makes the learners feel valued and cared for, such that they are more willing to work towards positive and disciplined climate in the classroom. This study therefore sought to provide a causal explanation of positive teacher-pupils relationship in science in terms of teacher variables, such as, teacher experience, gender, subject specialisation, instructional time, content knowledge, pedagogical skills, attitude to science as a subject and teacher - students relationship.

Research Questions

The following research questions guided the study:

RQ1: What is the pattern of relationships (correlations) in the model consisting of teacher experience, gender, subject specialisation, instructional time, content knowledge, pedagogical skills, attitude to science as a subject and its teaching and teacher-learner relationship in Ogun State Primary Schools?

RQ2: What is the relative importance of each exogenous and endogenous variable on the teacher-learner relationship?

Significance of the Study

The results of the study would provide empirical basis for organizing workshops for various stakeholders in education (e.g teachers, policy makers, school administrators etc.) on factors that affect teacher-pupils classroom relationship. Good learner performance develop from daily classroom interactions between teacher and learners. The knowledge base on the relation between these daily interactions and the learner performance is limited. With the present study, the researcher wants to add to this knowledge base. Government and educational administrators could therefore provide more targeted feedback to help teachers focus their time on the classroom practices that produce effective learning.

Scope of the Study

The study population was limited to public primary school teachers in the twenty Local Government Areas of Ogun State, Nigeria. The teacher variables studied were, teacher experience, gender, subject specialisation, instructional time, content knowledge, pedagogical skills, attitude to teaching science and teacher-learner relationship.

Conceptual framework

Goe (2007), examining past studies developed a new framework for determining teacher quality. The framework consists of four distinct but related ways of looking at teacher quality - teacher qualifications, teacher characteristics, teacher practices and teacher effectiveness which are grouped into three categories, input, process and outcomes.

This study adapted Goe's conceptual framework as follows:

Input

Teacher qualifications - Are among the resources they bring to the classroom and are considered important in establishing who should be allowed to teach; subject specialisation, content knowledge and attitude to science teaching.

Teacher characteristics - Are immutable or assigned characteristics of the teachers; teacher experience and gender

Process

Teacher practices - Are classroom practices, what the teachers actually do in the classroom; instructional time and teacher's pedagogical skills.

Outcomes

Teacher effectiveness (measured by learners' responses) - teacher - students relationship

Research Design

The study employed a non-experimental, survey design. Correlations among the variables of study were assessed testing theoretical propositions about cause and effect without manipulating variables. There is the assumption that some variables are causally related.

Population, Sampling Technique and Sample

The population of study comprised all Basic Six public primary school pupils and teachers in Ogun State, Nigeria. Ogun state consists of twenty Local Government Education Authorities (LGEAs) with a total number of 14,751 teachers (5,019 male and 9,732 female). Multi-stage sampling method involving stratification and sampling to size were used to get the required respondents for this study. 1% of the 14,751 teachers in the State (148) was sampled.

Instrumentation

The study made use of five (5) validated instruments, which are:

1. Teachers' Management of Time Observational System (TMTOS) which was adapted by the researcher was used to estimate the proportion of the schools' scheduled time spent on facilitating knowledge in science. The focus of the observation is the teachers' effective use of the pupils' time. The content validity and reliability of this instrument established using Lawshe's method of content validity and Scott pi were 0.77 and 0.81 respectively.
2. Pedagogical Skills Observational Schedule (PSOS) was adopted by the researcher. The instrument has four sections used to rate lesson plan, presentation of lessons etc. The content validity and reliability of this instrument established using Lawshe's method of content validity and Scott pi were 0.73 and 0.84 respectively.
3. Teacher-pupils relationship was adapted from Flander's Interaction Analysis Categories System (FIACS). It was validated and used to assess the interaction between the science teachers and their pupils. The content validity and reliability of this instrument established using Lawshe's method of content validity and Scott pi were 0.81 and 0.82 respectively.
4. An attitude scale designed by the researcher was used to assess the attitude of the science teachers to the subject and its teaching. The content validity and reliability of this instrument established using Lawshe's method of content validity and Cronbach Alpha were 0.73 and 0.71 respectively.
5. A forty-item instrument was used to test the teachers' science content knowledge (CKT). The content validity and reliability of the test established using Lawshe method and Kuder Richardson 20 (KR-20), because of its dichotomous scoring, were 0.74 and 0.96 respectively.

Data Collection Procedure

All the three observation instruments were used on each of the teachers in one science lesson.

The audio-video recording of the lesson also went on at the same time. Finally, the science Teachers' content knowledge test and attitude scale were administered on the teachers.

Statistical Analysis

Research questions 1 & 2 were answered using multiple regression and path analysis.

Results

The Ogun State science teachers profile revealed twenty-seven diverse teachers' subject specialisations. Only 39.8% of the BST teachers in the Ogun State have their subject specialisations in science and technology based courses.

Research Question 1:

TABLE 1: The Original and Reproduced Correlation Matrix for the Eight Variables

Variables	Z1	Z2	Z3	Z4	Z5	Z6	Z7	Z8
Z1	1.000	.043	.080	.126	.046	.159	.019	.092
Z2	.043	1.000	-.069	-.026	-.220	-.051	-.055	.000
Z3	.080	-.069	1.000	.048	-.052	.222	.070	.188
Z4	.134	-.025	.048	1.000	.197	.735	-.030	.680
Z5	.034	-.220	-.030	.197	1.000	.259	-.172	.135
Z6	.065	-.051	.222	.734	.259	1.000	-.041	.757
Z7	.038	-.018	.083	.013	-.157	.018	1.000	-.022
Z8	-.052	.000	.187	.680	.135	.757	-.022	1.000

Key: Z_1 = Teacher's experience Z_2 = Gender of teacher Z_3 = Teachers' subject specialization Z_4 = Instructional time Z_5 =Teachers' BST content knowledge Z_6 = Teachers' pedagogical skills Z7 = Teachers' attitude to BST Z_8 = Teacher's - pupils relationship

Table 1 reveals high significant relationships among the variables ($p < .05$). However, there is no relationship between gender and teacher-pupils relationship. It is also notable that the highest correlation ($r = 0.757$) is between pedagogical skills and teacher - pupils relationship.

Table 2

Summary of Causal Effect for Re - specified Model

Outcome	Determinants	Effects		Total
		Direct	Indirect	
Teacher-pupils relationship (Z_8)	Teacher's experience (Z_1)	-	.084	.084
	Gender (Z_2)	-	.003	.003
	Subject Specialisation (Z_3)	.053	.023	.076
	Instructional time (Z_4)	.283	.454	.737
	Content knowledge (Z_5)	-.057	.071	.014
Adj R2 = .595	Pedagogical Skills (Z_6)	.559	-	.559

For teacher-pupils relationship, the primary determinants were teacher's experience, gender, subject specialisation, instructional time, content knowledge and pedagogical skills, with adjusted R = .595. This model explained approximately 59.5% of the variances in teacher-pupils relationship.

Research Question 2:

The direct effect, indirect effect and total effect of each independent variable on the criterion variable, teacher-pupils relationship are shown in table 2. From the table, teacher experience and gender had no direct effect on the criterion variable, pedagogical skills had no indirect effect, while subject specialization, instructional time and content knowledge had both direct and indirect effects. Instructional time had the highest total effect (0.737); followed by pedagogical skills (0.559); then teacher experience (0.084); followed by subject specialisation (0.076); science teachers' content knowledge (0.014) and teacher's gender (0.003) the least. It follows therefore that in the model in which teacher-pupils relationship was the criterion variable, instructional time and pedagogical skills were the most important, followed by teacher experience; subject specialisation; teachers' content knowledge; and teachers gender the least. Teacher's attitude had no effect on the criterion variable.

Discussion

The study found that teachers' subject specialisation had a slight significant indirect effect on his/her relationship with pupils. Having discovered that subject specialisation of teachers has a significant effect on content knowledge; it implies that subject specialisation would have bearing on classroom relationship of teacher with the pupils. Also, teachers' content knowledge had a slight significant effect on teacher-pupils classroom relationship. Teachers' mastery or non-mastery of subject content knowledge would affect positively or otherwise relationship with the pupils. In this study also, instructional time had a significant effect on teacher-pupils relationship in sciene classes, according to Gettinger and Seibert (2002), researchers have opined that as little as half of each school day may be devoted to instruction in some classrooms depending on teachers' classroom practices, such as classroom relationship. This study also found out that ineffective use of instructional time had effect on teacher-pupils relationship, there were poor interactions in the science classes.

Also in this study, teacher experience had a significant indirect effect on teacher-pupils classroom relationship. This study agreed with the findings of Amusan (2014), who opined that teacher experience with their relationship and achievement in the classroom may not be linear. Effective use of instructional time had a very significant indirect effect on teacher-pupils relationship. It is reasoned that if adequate use is made of the time available to teach science, it could result in good interaction of teacher and pupils. Teachers' science content knowledge had a significant indirect effect on teacher-pupils relationship. Teachers' mastery or non-mastery of subject content knowledge could affect positively or otherwise interaction with the pupils.

Recommendations

From the research findings, the following recommendations are made:

* Teachers should use the classroom instruction time effectively for academic work, instructional time being a potent variable in this study.

* Good pedagogical skills were also found to relate positively with teacher-pupils' relationship. This means all teachers would need to develop and exhibit varied teaching skills in science classes so that pupils can learn effectively. Educational policy makers and stakeholders should endeavour to train in and expose teachers to the use of different and relevant teaching methods in science; while providing for science equipment. Teachers should be encouraged to come to BST classes better prepared to teach. This would redirect the classes from the present teacher-oriented classroom to pupil-oriented ones. Presently, majority of the teachers are lecturing their pupils.

* Teacher's experience is a factor in this study found to have an indirect influence on teacher-pupils relationship. Teacher's experience has a direct effect on instructional time and content knowledge and these two have direct effect on the criterion variable. Therefore, the teacher's experience should be put into consideration by stakeholders when placing teachers in science classes.

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