TEACHERS' QUALIFICATIONS AND EXPERIENCES AS CORRELATES OF PUPILS' PERFORMANCES IN PRIMARY SCHOOL MATHEMATICS IN OGUN STATE.

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ABSTRACT

This study examined teachers' qualification and experiences as correlates of pupils' performances in primary school Mathematics in Abeokuta South local government area of Ogun State. A total of 120 pupils made up of Twenty (20) pupils each from Six (6) primary schools (public and four private) were randomly selected, as well as Mathematics teachers that are holders of first degree only, N.C.E and those with non-teaching qualifications and with more than ten (10) years' experiences were used as samples for the study. A quasi-experimental design, where a self developed and standardized questionnaire and a Mathematics test items that were pilot tested to obtain a reliability level of 0.76 and 0.69, guided by three (3) research questions and two (2) hypotheses and tested at 0.05 level of significance, were used as instruments for data collection. The data collected were statistically analyzed using the t-test statistical tool. The outcomes rejected the two null hypotheses from the result gotten and compared with the level of pupils' performance in a the data collected. conclusion was reached and necessary recommendation was made that the study recommended further studies on student interest, teachers motivation, conductive environment be improved on as they are some of the factors determining success of pupils in primary Mathematics.

Keywords: *Teacher's qualification, Teaching experience, Performance, Mathematics teachers.*

INTRODUCTION

There is no doubt that what distinguishes the developed nations from the developing nations of the world is the degree of science and technology prevalent in these nations and Mathematics is the fulcrum on which science and technology

rotate. Different researchers in the field of education have acknowledged the place of Mathematics in Scientific and technological developments. For instance, Jegede and Brown (2009) have stressed that the catalytic effect of education on national development emanates mainly from the areas of science and Mathematics. This could be largely due to the impact of Mathematics on both cognitive and psychomotor skills of the human capital of a nation.

The significance of Mathematics in producing versatile and resourceful graduates that are required for economic development cannot be over-emphasized. As a result of this, the Science Teachers Association of Nigeria (1992) referred to Mathematics as the central intellectual discipline of the technology societies. Setidisho (1996) also maintained that Mathematics is a fundamental science that is necessary for understanding of most other fields in education. He further emphasized that it is glaring that no other subject forms such a strong force among the various branches of science. This implies that the place of Mathematics in primary school curriculum in Nigeria is paramount for scientific and human development as it serves both as a tool for academic progress in a chosen career and as a tool for preparing the individual for useful living.

One of the causes of poor performances of students in the mathematics in primary schools in Nigeria and elsewhere in the world is poor quality and quantity of teachers.

Quality has to do with the category of teachers that have been trained formally for the tasks of teaching Mathematics. In Nigeria, trained teachers for the primary school level are expected to have a minimum qualification of Nigeria Certificate in Education (N.C.E), Bachelor of Science Education [B.SC(ED)] or Bachelor of Education (B.Ed) degree before they are qualified to teach any subject including Mathematics.

The determinant of how primary school pupils learn, understand and perform in Mathematics to a large extent dependent on the quality and quantity of Mathematic teachers. This is because Mathematics teachers that are qualified and employed in the right quantity are supposed to teach effectively, leading to successful learning and improved performance for pupils because the educational system as a whole is said to be faced with many challenges like active shortage of qualified teachers, large class – size, archaic facilities and so on (Ukeje,1999)

Furthermore, since Mathematics is important, it is also important to have it taught by sufficient number of qualified and interested or maturated teachers. The National Policy on Education (FGN,2004) stated that no nation can rise above the quality of its teachers. This means that if the quality of teachers is poor it will result in poor quality product and this will affects the development of Nigeria and thus is similar to teaching of the chief examiner (WAEC, 2009) clearly stated that students have shallow knowledge of Mathematics, lack Mathematical / manipulation skills simply because they were exposed to poor teaching. As a result, their performance

is low, interest is depressing and their failure rate devastating (Obioma , 2004 Aguragah, 2004) student tend to be affected in their performances in other school subjects like physics ,and chemistry adversely with poor performances in Mathematics. According to Nigerian Educational Research and Development Council, (N.E.R.D.C) the quality of the teaching staff has correlation with students' achievement.

Also (Coombs and Brandywines, 2007) explained that "The problems of teachers' supply is one of the simple numbers and it is first and foremost a problem of quality and also the competence of the teachers is the most important factors in pupils' attitudes to science subjects. The quality of the schools and the achievement of the pupils is therefore believed to depend on qualified teachers and their teaching experiences. Qualified teachers or competent and experienced teachers who knows about appropriate and suitable methods of teaching and make use of available resources to teach, can make the teaching and learning of Mathematics very easy, interesting and alleviating the difficulties involved. It is seen that there is poor performance in Mathematics among senior secondary school students which actually emanates from their primary school background level and the cause of this problem are many and cut across all stakeholders in education.

STATEMENT OF THE PROBLEM

Mathematics is one of the major subjects meant to provide the basic concepts needed to enhanced the development of technology in the country.

Research reports (Ajayi, 2007, Adebayo, 2008) revealed that the performance of pupils in Mathematics is very appalling, hence calls for attention. The consequence of this might result from unqualified teachers handling this subject in the primary schools. The issue of quality and quantity of Mathematics teachers is important because without quality teachers in the right quantity, there will be no effective teaching and learning. And without this, pupils will find it difficult to learn and succeed in the subject.

However, what is yet to be ascertained in the present circumstance is how teachers' qualifications and experiences have affected pupils' performances in primary school Mathematics. And how the teachers are distributed in terms of their qualification, teaching experiences and gender within the primary school system in Abeokuta South local government area of Ogun State.

RESEARCH QUESTIONS

Based on the highlighted problems, the followings research questions were answered by the study;

i. What is the effect of teachers' qualifications on the performances of pupils in primary school Mathematics?

ii. What is the effects of teachers' experiences on performances of pupils in primary Mathematics?

iii. Is there any difference in the performances of primary school pupils taught with qualified and non- qualified Mathematics teachers?

RESEARCH HYPOTHESIS

Based on the above research questions, the following two hypotheses were formulated;

$H0_1$: there is no significant difference in the performances of primary school pupils taught by qualified and unqualified Mathematics teachers.

$H0_2$: there is no significant difference in the performances of primary school pupils taught by experienced and pupils taught by inexperienced teachers.

RESEARCH METHODOLOGY

This research was quasi-experimental design that examined and investigated the influence of teachers' qualifications and experiences on pupils' performance in primary school Mathematics in some selected primary schools in Abeokuta South local government area of Ogun state.

POPULATION

The population for this study comprises of the teachers and pupils in Abeokuta South local government area of Ogun State.

SAMPLE AND SAMPLING TECHNIQUES

The researcher used simple random sampling techniques to select twenty (20) pupils each from six (6) primary schools (three public and three private) as samples used for the study. Three Mathematics teachers from each of the randomly selected schools were involved in the study.

RESEARCH INSTRUMENT

Two research instruments were used; a structured fifteen (15) items questionnaire administered on the teachers and a set of twenty (20) Mathematics test items administered on the primary six (6) pupils. The two instruments were self- developed and subjected to psychometric test from which a reliability level of 0.76 and 0.69 were obtained respectively. The researcher then visited the selected schools to administer the instruments.

PROCEDURE FOR DATA ANALYSIS

The test item results as well as completed copies of the questionnaires were collected on the spot to remove bias and analyzed using t-test.

RESULTS AND DISCUSSION

In this research work, t-test was used to analyse the data collected, the stated hypotheses initially generated were tested at 0.05 level of significance.

Table 1 Shows the Level of Teachers' Qualification and their Experiences in Mathematics for each School.

Primary School	Total of Teacher s	Nos. With Less Than 10yrs	Nos. With Above 10yrs	Nos. With Degrees	Nos. With Non-Degree
A	3	2	0	1	0
B	3	1	1	1	0
C	3	1	1	0	1
D	3	0	2	1	0
E	3	0	0	2	1
F	3	1	1	0	1
Total	**18**	**5**	**5**	**5**	**3**

Table 2 Shows the Performances in the Mathematics Test Items for Primary Six Pupils

School	*Excellent*	*Very Good*	*Good*	*Poor*	*Total*
A	2	4	6	8	20
B	3	2	6	9	20
C	2	4	4	10	20
D	1	6	5	8	20
E	3	3	7	7	20
F	3	4	5	8	20
Total	14	23	33	50	120

Key

Excellent - 80 – 100; Very Good - 60 – 79; Good - 40 – 59; Poor - 0 – 39

The level of results of students in the data was compared with the teachers' qualification and experience.

Table 3: Shows the Grade Points of Teachers' Qualification and Years of Experience

Teachers' Qualification	*Points*	*Teachers' Years Experience*	*Grade Point*
M.Ed,	10	10yrs and above	10
B.Ed	8	8 – 9 years	8
NCE	6	6 – 9 years	6
M.Sc,	4	4 – 5 years	4
B.Sc , HND	3	3 – 4 years	3
OND,	2	1 – 2 years	2
WASSCE	1	Less than 1 year	1

The grade points of teachers' qualifications and experience in the table 3 above were compared with the grade points of the performances in the Mathematics test items for primary six pupils of experimental group.

TESTING FOR HYPOTHESIS 1

It states that there is no significant difference in the Mathematics performance of pupils taught by qualified teachers and those taught by unqualified teachers. This hypothesis was tested based on the information collected using T-test.

TABLE 4: T-Test Table for Hypothesis 1

Comparison of Pupils Taught by Qualified Teachers and Unqualified Teachers.

Number of cases	Mean	Standard deviation	a	df	T cal	Decision
100 (Pupils)	0.511	2.31				
20 (Pupils)	3.1	1..24	0.05	118	- 4.21	Accepted

Decision: The t-test value was obtained as itemized above since the calculated value of which is -4.21 is less than the critical value which is 0.874 that is (-4.21 < 0.874) then the null hypothesis 1 cannot be rejected, it is thus accepted. This means that there is no significant difference in the performance of Mathematics pupils taught by qualified teachers and those taught by unqualified teachers.

TESTING FOR HYPOTHESIS 2

It states that 'there is no significant difference in the Mathematics performance of pupils taught by experienced teachers and those taught by inexperienced teachers'. This hypothesis was tested using t-test and analysed result shown below;

Table 5: T – Test Table for Hypothesis 2

Number of cases	**Mean**	**Standard deviation**	**α**	**df**	**T cal**	**Decision**
20 (pupils)	3.1	1.24	0.05	118	-5.34	Accepted
100 (pupils)	0.511	2.31				

Decision: The t-test value was obtained as itemized above. Since the calculated value of which is -5.34 is less than the critical value which is 0.874 that is (-5.34 < 0.874) then the null hypothesis 2 cannot be rejected, it is therefore accepted. This means that there is no significant difference in the pupils' performance taught by experienced teachers and those taught by inexperienced teachers.

The results revealed that there is significant difference between the pupils taught by specialist teachers and those taught by non-specialist teachers.

The qualifications and years of experiences of the teachers in these selected primary schools in Abeokuta South Local government area negatively enhanced the performances of pupils in Mathematics

CONCLUSION

The results obtained from this study revealed that the teachers' qualifications and experiences in the schools used have negative correlation with the performances of students in primary school Mathematics. The performances of students were generally below average.

The analyzed results gave no-evidence to conclude that the experiences and qualifications of teachers influence the performance of pupils in primary school Mathematics. Therefore there is no significant difference in the performance of pupils taught by specialist and non-specialist teachers.

RECOMMENDATIONS

1. Since the result of the study indicates that there are other parameters that may determine pupils' performances in primary school Mathematics other than teachers' qualification and experiences, there is the need to expand the study to include other attributes such as motivation and parental influence for future studies.

2. There should be a regular and adequate organized seminars, workshops and in-service training for primary school Mathematics teachers.

3. Also, updated textbooks should be provided in schools. Mathematics teachers should also have to improve their personality and show positive characteristics and re-inforcements so as to make the teaching of Mathematics easy and interesting.

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