

Teachers' Teaching Experience As Correlate Of Senior Secondary School Students' Performance In Mathematics In Badagry Local Government Area Of Lagos State

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Abstract: *This study investigated teachers' teaching experience as correlate of senior secondary school students' performance in mathematics: A case study of Badagry Local Government Area of Lagos State. The study adopted descriptive research design. The target population comprised all public and private senior secondary schools students in Badagry Local Government Area. 12 public and 12 private senior secondary schools were randomly selected for the study. A total of 600 students from these schools participated in the study. The second term (2018/2019 academic session) students' scores in mathematics were collected in each of the sampled schools using a researcher-designed data sheet. The instruments used for data collection were mathematics result data sheet (MRDS) and mathematics teachers' interview (MTI). The data analyzed in this study also included data from interviews that were conducted with 11 mathematics teachers in the chosen schools. The correlation analysis was used to test the null hypothesis generated for the study at 0.05 alpha level. The findings revealed that there is no statistically significant relationship between teachers' years of experience and students' performance in Mathematics in the public and private secondary schools in Badagry Local Government Area of Lagos State.*

At the end, it was majorly recommended that Government should make it mandatory to the private secondary school owners to train their teachers and retained them to enable them acquire experience on the job.

Keyword: *Teachers' experience, Seniors Secondary schools, Performance, Mathematics Teacher, Experienced Mathematics Teachers and Inexperienced Mathematics Teachers.*

I. INTRODUCTION

Mathematics could be regarded a science of structure, order, number, speed and amount. Mathematics as a theme affects all aspects of human life at completely different levels. It's seen by society because the foundation of scientific technological information that's very important in social economic development of a nation. It's in realization of the large applications of Mathematics that fashioned Eraikhuemen (2003) to posit that a disciplined and ordered pattern of life

will solely be achieved through the culture of Mathematics. From the social and economic views, Mathematics could be a key part and a everyday activity that each living person consciously or unconsciously practices in one kind or the opposite. From this angle, Mathematics could be a subject of everyday application and a communication tool per excellence. The proven fact is that any smart student of arithmetic simply crosses into alternative subjects and will well.

Ukeje (2003) represented Mathematics as a tool for civilization that plays very important roles in human endeavors particularly within the field of science and technology. This is often recognized by programme planners as a result of the product of secondary faculties are going to be expected to possess: numeracy, literacy, ability to figure and suppose as mathematicians and therefore the ability to use mathematical strategies in finding environmental issues. For a nation that desires to realize speedy technological development, educational performance in arithmetic is central to the attainment of this commendable goal. Education is that the method by that the latent talents of people area unit developed in order that they'll be helpful to themselves and therefore the society (Olaniyonu, Adekoa & Gbenu, 2008). Purposeful enhancements within the quality of education that students receive are determined by the standard of teachers. Therefore, quality teaching and learning area are trigonometric function qua non for students' educational performance. Considering the preceding, this study can investigate the link between mathematics teachers' years of experience and students' performance in mathematics in public and private secondary faculties in Badagry government area of Lagos State.

Programs in Education manufacture qualified teachers of mathematics for secondary schools. However, the overall performance in mathematics among secondary students has been poor for several years in African country. This has raised concern on quality and knowledge of teachers and their inputs within the teaching and learning method. With the persistent low performance in mathematics, the teachers' inputs in teaching of mathematics become questionable. Poor educational performance in mathematics has been joined to many factors that embody high teacher-student quantitative relation, shortage of fine teaching workers, poor quality of academic leadership, political instability and politicization of academic programs, teachers' shallowness, teachers' experience, automatic promotion, age of the learners, and inadequate essential physical facilities and instrumentality (Ewetan, 2010; Akinwunmi & Odunsi, 2008). Most students in African country read mathematics as problematic and abstract most likely as a result of students have nice problem in understanding, assimilatory and retentive in the mathematics ideas. Variety of studies have additionally been conducted to look into into however all of those teacher-related variables like ; political instability, automatic promotion, inadequate physical facilities, teachers' self - efficacy, teachers' qualification, teachers' perspective, teachers' interest, teachers' experiences e.t.c are concerned in students' learning and learning achievements. Though, literature seems to confirm that most of the teachers' variables/characteristics have positive relations with pupils' performance. But researches have not confirmed this as much in a population of Nigerian primary school pupils.

However, the experience of the teacher and the way it's concerned in students' learning action has not been given the merited attention. : Teachers' years of expertise area unit one in all the teachers' qualifications indicators that's believed to be a big determinant of students' educational performance.

Teachers' experience is important to have interaction students in purposeful and effective mathematical practices

within the room so as to construct deep understanding of arithmetic (Chapman 2015). Preservice teacher education and professional development are factors that may identify a mathematics teachers' effectiveness in an elementary classroom and the impact of student achievement in the specific content.

A large body of international research suggests that many qualified and pre-service elementary teachers do not possess appropriate mathematics subject matter knowledge (MSMK) for teaching (Hourigan & O'Donoghue, 2015) while a majority declare that elementary mathematics teachers need MSMK, the question remains as to what this means and how it can be best achieved. In former times, a 'minimalist' view was common, where one was considered to have sufficient knowledge if they could do the mathematics covered in the curriculum (Hourigan & O' Donoghue, 2015). Now, this viewpoint has been rejected for the fact that mathematics content has become more rigorous at the elementary level. If one goal of teacher education is to ultimately improve teaching, then there needs to be more of a focus on understanding the knowledge drawn on by teacher educators as they teach content to pre-service teachers

However, there is the need for caution in Nigeria about the experience able to cope with the new trends in education. The subject curriculum is changing almost every year as the whole world is changing with technology. This study was set up to find out the relationship between teachers' years of experience and students' performance in the secondary schools mathematics. Specifically, this study aims to:

- ✓ Find out the effect of the experience of mathematics teachers on students' performance in mathematics public and private secondary schools in Badagry Local Government Area of Lagos State?
- ✓ Find out the effects of mathematics teachers' class allocation on the basis of teaching experience on students' performance public and private secondary schools in Badagry Local Government Area of Lagos State?
- ✓ Identify the relationship between teachers' years of experience and students' performance in Mathematics in the public and private secondary schools in Badagry Local Government Area of Lagos State.?
- ✓ Identify if there are other factors related to years of teaching experience that affect students' performance in Mathematics in the public and private secondary schools in Badagry Local Government Area of Lagos State.?

HYPOTHESIS

There is no significant relationship between teachers' years of experience and students' performance in Mathematics in the public and private secondary schools in Badagry Local Government Area of Lagos State.

II. METHODOLOGY

Descriptive research design was adopted for the study. The population for this study comprises mathematics teachers in the public and private senior secondary schools in Badagry

Local Government area of Lagos State. The population of comprises 600 students and 40 mathematics teachers. A total of 24 schools were involved in the study. These were 12 public secondary schools and 12 private secondary schools. The instruments used for data collection were mathematics result data sheet and mathematics teachers' interview. The second term (2018/2019 academic session) students' scores in mathematics were collected in each of the sampled schools using a researcher-designed data sheet. The data in this study also included data from interviews that were conducted with 11 mathematics teachers in the chosen schools.

Two sets of data were collected in this study – the students' results in mathematics and teachers' interview. Students' results were collected using a researchers' designed template named mathematics result data sheet (MRDS) while mathematics teacher interview (MTI) data were collected via a researcher-designed interview protocol. The result data sheet was designed to collect information on school type, mathematics teachers' allocation to classes, mathematics teachers' academic qualification, length of experience and immediate past mathematics examination scores i.e second term examination.

The interview, which was unstructured was conducted to not only collect information about teachers' experience, but also to find out other variables that affects the teaching and learning of mathematics and more importantly of students' achievements. The interview protocol had six items which were: Do you think mathematics teacher years of experience should be considered in allocating teachers to classes? How? Do you think mathematics teachers' years of experience also have effect on teaching mathematics? How? Do you think mathematics teachers' years of experience that we are talking about have effect on the performance of students in mathematics?

These data presented us with both qualitative and quantitative data sets. The quantitative data set was analyzed using both descriptive and inferential statistics including correlation analysis while the interview data was analyzed using content and trend analysis. The mathematics result was collected from a valid and reliable source in the schools through the help of education district while the reliability of the interview data was ascertained through the help of experts in the field.

The consent of the principals and teachers of the participating schools was sought through pre-visit. Permission was sought from Local Government Education district through a letter of introduction from the researchers. At a much organized time, information were collected and the interview was done as well during the visit to each school.

The results of these analyses, indicating the findings of this study are presented in the next section.

III. RESULTS

In answering research question one which is one of the purposes of this study, Table 1 shows the mathematics teachers' status by experience in the selected schools.

Teachers' yrs of experience	Private			Public			
	Class allocation	SSS1	SSS2	Class allocation	SSS1	SSS2	SSS3
Below 5years	1 (7.7%)		1 (100%)	0	-	-	-
Between 5 to 9years	9 (69.2%)	3 (33.3%)	3 (33.3%)	3 (33.3%)	6 (27.3%)	3 (50%)	3 (50%)
Between 10 to 14 years	3 (23.1%)	1 (33.3%)	1 (33.3%)	1 (33.3%)	6 (27.3%)	3 (50%)	3 (50%)
Between 15 to 19years	0	-	-	-	8 (36.4%)	3 (37.5%)	2 (25%)
Between 20 to 24years	0	-	-	-	2 (9%)	1 (50%)	22221 (50%)
Between 25 to 29years	0	-	-	-	0	-	-
Between 30 to 34years	0	-	-	-	0	-	-
TOTAL	13				22		

Table 1: Mathematics teachers' status by experience

The evidence in Table 1 shows that in private schools, one mathematics teacher(7.7%) who has less than five years of experience taught students of SS1 to SS3, also nine mathematics teachers(69.2%) between 5 to 9years of experience were allocated to SS1 to SS3 in which three (33.3%) of them each taught SS1, SS2, SS3 and lastly three mathematics teachers(23.1%) between 10 to 14 years of experience also were allocated to SS1 to SS3 in which one(33.3%) of them each taught SSS1, SSS2 and SSS3. In public Senior Secondary Schools, there is no single mathematics teacher with less than five years of experience, six mathematics teachers (27.3%) between 5 to 9years of experience were allocated to SS 1 to SS2in which three(50%) of them each taught SSS1 and SS2, six mathematics teachers (27.3%)between 10 to 14 years of experience also were allocated to SS1 to SS2 in which three (50%) of them each taught SS1 and SS2, eight mathematics teachers (36.4%) between 15 to 19 years of experience were allocated to SS1 to SS3 in which three(37.5%)of them taught SS1, two (25%) of them taught SS2 , three (37.5%) of them taught SS3 and two mathematics teachers (9%) between 20 to 24 years of experience were allocated to SS2 and SS3 in which one (50%) of them each taught SS2and SS3. In private secondary schools, 10 mathematics teachers (76.9%) with less than 10years of experience and three (23.1%) with more than 10 years of experience. In public secondary schools, six mathematics teachers (27.3%) with less than 10 years of experience and 16 mathematics teachers (72.7%) with more than 10 years of experience. So, it is obvious that there are more experienced mathematics teachers' in public senior secondary schools than private.

The study was also interested in finding out the effects of mathematics teachers' class allocation on the basis of teaching experience on students' performance which was the second objective of this research work. The data gathered in Table 1 shows Mathematics teachers' years of experience and the classes that they teach. It is realized that in private schools, Years of experience are not considered in allocating mathematics teachers to classes. However, it was realized that the mathematics teachers' years of teaching experience plays a vital role in allocating mathematics teachers to classes. For example, during interview, Teacher V submits:

"if we do allocation and do not consider the experience, for somebody to handle SSS3, a fresher cannot be able to do it

because the scheme of work we use is voluminous that he that is just coming afresh, somebody to handle SS3 must have the experience of the scheme of work of SS1, SS2 ahead because as at that class, he will be making use of some of the topic taught at SS1 and SS2 to buttress his point” (Teacher V)

The above mathematics teacher is of the opinion that a newly employed mathematics teacher who is inexperienced cannot handle SS3 because he needed to have taught SS1 and SS2 and be familiar with the scheme before teaching SS3. This may not be real, but said by the teacher V.

“Yes! It is very important to consider experience in allocating mathematics teachers to classes. The reason is because foundational class is the SS1 and they have to move to the terminal class which is the SS3. A good and experienced teacher, teaching mathematics will be able to take care of foundational class. And when the foundation is built, definitely the SS2 and SS3 will become like revision to students because they will not have any problem since they were handled properly by experienced teacher in SSS1. The school administrators also said this on their last visit” (Teacher VI)

The above mathematics teacher explained that the foundational class which is the SSS1 needs to be handled by experienced teacher to make the SSS2 and SSS3 easy.

Research question three was answered in line with the one and only tested hypothesis in this study as can be found in Table 2.

In answering research question four according to the interview excerpts below, some of the mathematics teachers posit that there are other factors that affect students’ performance in mathematics. For example, responding to the question on his perceived effect of teachers experience on students’ performance, Teacher II said:

“Well, it should not be the only reason in the sense that the teachers are to give to the students and ideally students are to work on themselves. There are times that a teacher may be exceptionally good, may have the required instructional materials, give everything to the students but on the part of the students now is that they don’t work on themselves”.

The teacher is of the opinion that apart from teachers’ experience, there exists other factors or variables that might be implicated in students’ performance, but students and some other environmental factors are also important. Most students do not perform well in mathematics because they fail to practice. However, responding to the same question, Teacher VII said:

“It affect because the teacher will use his/her experience to identify the different levels of students that are low, and fast learners. The teacher will use his experience because the fast learners tend to dominate the class, as the teacher, you need to (inaudible) all of them to come to the same level so that others will not just be looking while you will be teaching only one part of the class, experience of the mathematics teacher affects students’ performance because it is the experience that helps the teacher to identify the type of students he/she has and how to deal with them’.

Since the results of the study were presented in accordance with the research objectives and hypothesis.

To test this hypothesis that states that; there is no statistically significant relationship between teachers’ years of experience and students’ performance in Mathematics.

The data on students’ performance and teachers’ years of experience were pulled together for correlation analysis. A summary of the result of the correlation analysis is presented in the Table 2.

Sample size	Degree of freedom	Critical value	Calculated value	Significance	Remark
35	33	0.338	0.38	Statistically not significant	The null hypothesis is rejected

Two tailed test significance level is 0.05

Table 2: Pearson product moment correlation of teachers’ years of experience and students’ performance

The correlation coefficient of 0.38 shows that there is a weak relationship between teachers’ years of experience and students’ performance. This is on the spot interpretation of correlation coefficient. However, for statistical significance, the researchers conducted a statistical test of significance. The calculated value using the Pearson’s product moment correlation i.e. 0.38 is compared with the critical value relative to the test being conducted. Degree of freedom is $N-2=35-2=33$; the critical value at 0.05 significance level is 0.338. By comparing these two values (the calculated value and the critical value), one finds that the calculated value is greater than the critical value. This implies that the observed relationship is statistically significant. Therefore, the null hypothesis that states that there is no significant relationship between teachers’ years of experience and students’ performance in Mathematics is rejected. This implies that there is a statistically significant relationship between teachers’ years of experience and students’ performance in Mathematics.

IV. DISCUSSION OF FINDINGS

The first finding of this study says that teachers’ years of experience is statistically significant to students’ performance in Mathematics. This current finding concurs with Akinsolu (2010), Adeyemi (2008), Chhinh and Tabata (2003), Abu and Fabunmi (2005) who found that teachers’ teaching experience correlates significantly and positively with students’ academic performance. The finding is also in conformity with Jega and Bashir (2018) who assert that students taught by more qualified and experienced teachers in terms of knowledge of subject matter performed better than those taught by less qualified but experienced teachers.

However, this current finding negates the position by a strand of the literature that says; a number of teacher variables which include teachers years of experience, teacher academic attainment or qualifications, teacher-student ratio, and teacher development programmes had no significant influence on students’ academic performance (Yara, Surumo, Ayodele & Ige, 2012). The finding also negates the findings of a study of the relationship between teachers’ effectiveness and students’ academic performance in public secondary schools in Delta State, Nigeria; Akiri & Ugborugbo (2009) using correlation, simple regression, t-test, and single factor analysis of variance

who found that effective teachers produced better performing students but the observed differences in students' performance were statistically not significant.

On the other hand, the interviews conducted show that mathematics teacher' years of experience is a measure of quality and thus becomes imperative in the achievement of students' academic performance. As regards to this, many studies have shown a positive relationship between teachers' experiences and students' achievement. The result of the interview conducted by the researchers support those who advocate that experienced teachers need to be retained in schools if higher productivity is to be achieved because learners achieve more from these teachers.

In view of the second finding that shows that there are more experienced Mathematics teachers in the public secondary schools than private secondary schools in Badagry Local Government Area of Lagos state; from the data gathered in Table2, it is obvious that there are more experienced mathematics teachers in the public Senior Secondary School than private senior secondary school in Badagry Local Government Area of Lagos state. Taking into account the third finding that shows that mathematics teachers' years of experience play a vital role in allocating teachers to classes in public Senior Secondary Schools but do not seem to play a vital role in allocating classes to teachers in private schools; from the interviews conducted by the researchers, evidence exists that the teachers' teaching experience plays a vital role in allocating mathematics teachers to classes in public schools while the reverse is the case in private schools.

V. CONCLUSION AND RECOMMENDATIONS

The experience of the mathematics teachers has positive effects on their teaching capabilities and subsequently on students' performances in mathematics. Also, differences in teachers' years of experience had significant impact on fostering improvement in academic performance in senior secondary school education. So, there should be considerations of teachers' experience before allocating them to classes. Based on the findings of this study, the following recommendations are made to improve the academic performance of students in mathematics:

- ✓ Government should make it mandatory to the private secondary school owners to train their teachers and retained them to enable them acquire experience on the job.
- ✓ Government should also make it mandatory for the private secondary school owners to always consider the mathematics teachers years of experience in allocating them to classes.
- ✓ Government should retain the mathematics teachers in schools to make them gain insight in their career which shall enhance good performances in mathematics
- ✓ Since experience makes the mathematics teachers gain extra knowledge on the job, the schools' managers should consider mathematics teachers experience in class allocation to aid good performances.

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