International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

TEACHERS' CHARACTERISTICS AS DETERMINANT OF MATHEMATICS ACHIEVEMENT AMONG SECONDARY SCHOOL STUDENTS IN DELTA NORTH SENATORIAL DISTRICT

[1]ORDU, Christian Papa and Dr. S.B. IJEH[2]

1&2Department of Science Education, Faculty of Education, Delta State University, Abraka.
DOI: https://doi.org/10.55248/gengpi.5.0324.0757

ABSTRACT :

The study examined influence of teachers' characteristics on mathematics achievement among secondary school students in Delta North Senatorial District, Delta State. Three research questions were raised and answered. Three hypotheses were formulated and tested at alpha level of 0.05. The design employed for this study was causal-comparative ex-post facto research design**.** The study population consisted of 17,087 SSII Mathematics students, from which a sample of 728 SS II students was selected using a multistage sampling procedure. Data collection was conducted through the utilization of three research instruments: The Teachers Characteristics Checklist (TCC) and the Mathematics Achievement Test (MAT). To ensure the reliability of the MAT underwent assessment using Kuder-Richardson-21 reliability method. The MAT yielded a reliability coefficient of 0.76. Following data collection, analysis was performed employing descriptive statistics such as mean and standard deviation, as well as the independent t-test. The findings of the study revealed that there was a significant difference in the mean achievement scores of students taught by: qualified and those taught by unqualified teachers in mathematics. experienced and those taught by inexperienced teachers in mathematics; and there was no significant difference in the mean achievement score of male and female teachers in mathematics in Delta North Senatorial District. Based on the findings of this study It was therefore concluded that teachers' characteristics such as qualifications and experience are important factors influencing student academic achievement. Based on the conclusion it was recommended among others that Ministry of Education should employ only qualified Mathematics teachers to teaching Senior School Mathematics in, order, to enhance and improves students' achievement in Senior School Mathematics.

Keywords: Teachers' Characteristics, Mathematics, Achievement, Qualifications, Experience, Sex

INTRODUCTION :

Mathematics is a subject of study that involves numbers, shapes, and patterns. It is a fundamental branch of science that helps us organize and understand the world around us. Mathematics is not just about calculations and formulas; it is also about logical reasoning and problem-solving. Mathematics plays a crucial role in various fields, including science, engineering, finance, and even art. It provides us with the necessary tools to analyze, predict, and model physical, biological, and social phenomena. One reason why mathematics is important is that it helps us make sense of the world around us. By studying mathematics, we can develop a deep understanding of patterns and relationships, allowing us to solve problems and make informed decisions. Mathematics is also used in various industries and professions. For example, engineers use mathematics to design and analyze structures, economists use mathematics to study economic systems, and mathematicians use mathematics to explore and discover new concepts. (Chirume& Chikasha,2014). However, Mathematics continues to be a stumbling block to majority of people as most of them have failed to attain their aspirations in life because of low achievement in Mathematics. People have attributed the students' poor performance in Mathematics to a variety of reasons, sometimes blaming one another without making deep investigation on the real causes of students' low performance in Mathematics (Mensah et al., 2022).

The problem of low pass rate in senior School Certificate Examination Council (SSCE), Ordinary level Mathematics examination has been consistent. Despite the fact that the situation appears to have improved, there is still room for improvement in terms of its function in scientific and technical growth. There is still a fluctuation in achievement of students in mathematics as shown in the senior School Certificate Examination (SSCE) (Appendix A). The Table in Appendix A showed achievement of students in SSCE Mathematics conducted by West Africa Examinations Council in Delta State from 2016 to 2018. The table showed that only 70% of the students that sat for SSCE Mathematics in 2016, 79% in 2017 and 69% in 2018 got at least a credit pass in the subject, while the rest failed (See Appendix A). These results indicate that there is still room for improvement as the academic achievement of many students in mathematics still falls below expectations. It is true that achieving academic excellence requires a high

degree of intellect, however new research has shown that academic accomplishment in mathematics may also be predicted by other criteria in addition to intelligence. (Busato, et al., 2010; Chamorro et al., 2013). One of the factors is teachers' characteristics.

In any debate about education or knowledge transmission, teachers cannot be ignored. Teachers have a crucial role in the dissemination of information. According to Ali (2009), there is a statistically significant correlation between the academic accomplishment of students and the qualities of their professors. Therefore, the calibre of a country's instructors determines the calibre of the product the country produces. It is noteworthy to mention that educators have a major influence on the quality of education that pupils get. Teachers have a major role in ensuring that children succeed well academically and have a favourable attitude towards mathematics. It makes sense why teachers are regarded as one of the most valuable resources in any educational institution. Aina, et al., (2013) assert that the teacher is the most important educational resource in the system out of all the others. According to Obadara (2015), teachers are crucial to the effective functioning of the educational system and are important for the advancement of education.

Teachers are a vital component of every country's complete educational system. Additionally, they serve as hubs for education. The importance of instructors in the teaching and learning of mathematics, as well as other subjects, was highlighted by Ashimole (2011). According to Akinsolu (2010), teachers are essential prerequisites for students to meet the aims and objectives of their education. The National Policy on Education (FRN, 2006) published by the Federal Republic of Nigeria acknowledged the value of teachers by asserting that no country's educational system can surpass the quality of its instructors. There are differences among these professors. Qualifications, experience, and sex are the attributes of teachers.

Twelve qualities, which link to the care for students both intellectually and emotionally and support current indicators for academic achievement, are North of what students see as excellent teaching (Thompson, et al., 2015). Fairness, optimism, preparedness, personal touch, respect for students, high standards, humour, creativity, owning up to mistakes, forgiveness, compassion, and helping students feel like they belong are some of these traits. The qualifications, experience in the classroom, and sex of teachers were looked at in this research. The current state of these elements would undoubtedly have an impact, either favourable or unfavourable, on academic achievement pf secondary school students in mathematics (Ebere, et al., 2016).

A person who has earned the academic and professional credentials necessary to be registered as a teacher at any level of education is said to have a teacher qualification. It also has to do with acquiring the relevant information, abilities, competence, and inventiveness required for high-caliber, fruitful involvement in the teaching profession. Teacher qualification is a pre-requisite requirement for meeting the objectives of the Mathematics curriculum. It is the most important factor in improving students' achievement and attitude towards Mathematics. According to Akinsolu (2010), kids' academic success in schools was influenced by the availability of competent instructors. According to Thomas (2014), pupils taught by instructors with the National Certificate in Education (NCE) and Bachelor of Science in Education as their highest degrees showed a considerable difference in academic success. On the other hand, Anita (2013) revealed that teachers' qualification does not correlate with students' academic achievement.

Adedayo (2012) also examined the influences of teachers' qualification on the achievement of senior secondary school students in Mathematics. The findings showed that pupils instructed by more qualified instructors outperformed those instructed by less qualified teachers in terms of achievement. It was also shown that when mathematics was taught by qualified instructors, kids performed better.

Another characteristic to be examined is the teachers' experience. The amount of years a teacher has worked as a teacher is referred to as their experience. It also has to do with the growing understanding of the need to broaden one's quest for novel concepts, novel obligations, and novel problems. The experience and subject-matter expertise of teachers are essential for successful instruction. Rice (2010) asserts that the subject matter and the teacher's educational background influence the extent to which a teacher's experience matters. He continued by saying that workers' knowledge, skills, and productivity all increase with experience. These attributes help students develop the critical thinking and problem-solving skills necessary for mathematical inquiry and analysis, as well as a full comprehension of mathematical ideas. For new instructors in need of counsel, support, and ongoing direction, seasoned educators are a valuable resource. Experience, according to Okey (2012), is strongly linked to a teacher's capacity to organise lessons, deal with a variety of student reactions, evaluate their own success as a teacher, and encourage student inquiry. According to Akinyele (2011) and Commey-Ras (2013), kids learn best from instructors who have been teaching them consistently over a long period of time since experience enhances teaching abilities. Senechal (2010) discovered that teacher experience had a strong beneficial impact on student success, with considerable increases happening during the course of the teacher's later years, although at a slower pace. during half of the benefits occur within the instructor's first few years of practice. In addition, educators with many years of experience are certain that, with additional effort, even the most challenging student can be reached, while educators without experience feel powerless to cope with uninspired pupils (Gibson & Dembo, 2017).

In addition, sex is another teacher characteristic. Sex is a state of being a male or female mathematics teacher. In the secondary schools, mathematics students are taught by either male or female teachers. Eryilmaz (2014) observed that sex contributes to poor achievement and attitude of students towards Mathematics. Sex according to Yang (2010) refers to the social attributes and opportunities associated with being male and female or girls and boys. These attributes are socially constructed and are learned through socialization processes. The study of Gonzuk and Chargok (2011) opined that sex of teachers plays a very vital role on students' academic achievement and attitude towards Mathematics.

Beilock, et. al. (2010), states that there is a relative effectiveness of male and female teachers on students' academic achievement and attitude towards Mathematics. According to Carrington et al. (2018), having a same-sex instructor has no effect on a student's exam scores, regardless of gender, when it comes to science. Additionally, using a sample of 19 secondary school instructors and pupils. Research by Lingard, Martino, Mills, and Barr (2012) demonstrates that a teacher's sexual orientation has no discernible impact on students' good academic achievements or attitudes. This result is also found in Sokal, et al., (2015) in a study with 16- to 18-year-old students in a school regards to performance, as well as in Driessen (2017) with a large-scale sample of secondary schools, in relation to Mathematics tests' results, which included 5,181 SSI students, 251 teachers and 163 schools. Krieg (2015) also concludes that having a teacher of the same gender is not relevant. However, the study shows that male and female students in SSI assigned to female teachers obtain higher marks on a standardized test. A well-prepared teacher is one who is competent and knowledgeable in the subject matter being taught; this increases the likelihood that the teacher will take the time during lessons to observe and address behavioural issues, efficient use of instructional time, student involvement, and ultimately academic achievement.

Teachers should be interested in their students because it fosters a sense of community. Humorous teachers add interest to the learning process. Students instantly see the strength mirrored in instructors who are quick-witted and have the ability to utilise humour to break the ice in challenging

circumstances. These teachers serve as excellent role models for handling awkward situations in a professional and courteous manner. Pupils are asked to recall odd behaviours they have seen in their instructors. According to Irvine (2011), students' favourite instructors were those that maintained high standards, established boundaries, provided discipline, and encouraged them to succeed Students' attitudes are generally affected by these behaviors. Students will have a positive and successful school experience if these traits are incorporated into everyday teaching routines. Since the success and quality of any educational system depend on the quality and quantity of teachers' input into the system, it is evident from the above background that students' poor academic achievement and attitude towards mathematics are attributed to teachers' characteristics. Darling-Hammond (2010) argued that states and nations that want to improve student achievement and attitudes towards mathematics should pay attention to the qualifications of the teachers they hire and retain. The most important factor in improving students' achievement and attitude towards Mathematics is by employing qualified teachers in all schools (Abe & Adu, 2013). However, this study will examine the influence of teachers' characteristics on students' Mathematics achievement in secondary school level in Delta North Senatorial District, Delta State. The rationale behind this study stems from the belief that teacher characteristics play a significant role in determining students' outcomes in Mathematics. By examining the impact of teacher attributes such as qualifications, experience, and sex, researchers can gain valuable insights into the factors that influence students' mathematics performance.

Statement of the Problem :

The importance of mathematics as a subject cannot be overstated. It plays a crucial role in various aspects of life, including problem-solving, critical thinking, and logical reasoning. However, many students struggle with mathematics to the extent of persistently achieving low grades, and they also develop a negative attitude towards mathematics. This low achievement and attitude have over the years been attributed to many factors, such as the school environment, teaching effectiveness, enthusiasm, and knowledge.

However, the researcher in this study is of the opinion that teacher characteristics could play a crucial role in students' achievement and attitudes towards mathematics. This opinion is based on the fact that teachers play a crucial role in facilitating the learning process, and teacher characteristics can also shape students' attitudes towards mathematics. Studies have concentrated on teachers, schools, students, socio-economic status and educational level of parents, and learning environment factors, but very few influence teacher characteristics such as qualification, experience, and sex on students' achievement and attitude towards mathematics, particularly in Delta North Senatorial District. Thus, the problem of this study put in question form is: what is the influence of teacher characteristics (such as qualification, experience, and sex) on students' mathematics achievement in Delta North Senatorial District?

Research Questions :

The following research questions were raised to guide the study.

1. What disparity exists in the achievement of students taught by qualified versus unqualified teachers in mathematics within the Delta North Senatorial District?
2. What variation is evident in the achievement of students taught by experienced versus inexperienced teachers in mathematics within the Delta North Senatorial District?
3. What disparity is observed in the achievement of students taught by male versus female teachers in mathematics within the Delta North Senatorial District?

Research Hypotheses :

The following hypotheses were formulated for the study.

1. There is no significant difference between the achievement of students taught by qualified and unqualified teachers in mathematics in Delta North Senatorial District.
2. There is no significant difference between the achievement of students taught by experience and inexperience teachers in mathematics in Delta North Senatorial District.
3. There is no significant difference between the achievement of students taught by male and female teachers in mathematics in Delta North Senatorial District.

Purpose of the Study :

The purpose of this study was to examine influence of teacher characteristics on students' achievement and attitude towards Mathematics in Delta North Senatorial District, Delta State. Specifically, the study:

I. investigate the difference in the achievement of students taught by qualified and unqualified teachers in mathematics in Delta North Senatorial District.
II. explore the difference in the achievement of students taught by experienced and inexperienced teachers in mathematics in Delta North Senatorial District.

III. investigate the difference in the achievement of students taught by male and female teachers in mathematics in Delta North Senatorial District.

RESEARCH METHOD :

Research Design

The design employed for this study was causal-comparative ex-post facto research design. A causal-comparative ex-post facto research design is a type of non-experimental design that seeks to explore possible cause-and-effect relationships between an independent variable and a dependent variable after the fact, without intervention by the researcher.

Population of the Study

The population of the study comprised of 17,087 SSII Mathematics Students consisting of 8371 males and 8716 females. There are 153 Senior Secondary Schools situated across the nine (9) Local Government Areas of Delta North Senatorial District with a population

Sample and Sampling Technique

The sampled size for the study consist of 728 SS II students selected from four (4) Local Government Areas, out of 9 Local Government Areas of Delta North Senatorial District. The sample size was determine using multistage sampling procedure.

Research Instrument

Two research instruments were used for data collection in this study. These are: Teachers Characteristics checklist (TCC) and Mathematic Achievement test(MAT). The Teachers Characteristics Checklist (TCC) contain information on teachers' characteristics such as teacher sex, qualification and teaching experience. Mathematic Achievement Test(MAT). was is divided into two sections A and B. Section A is Bio-data of the students. The section B of the MAT consists of 50 multiple choice items with option A-D. The items in the Mathematic Achievement Test(MAT) were adapted from Macrae, et al., (2016) in line with the first term scheme of work for SSII.

Validity of Research Instrument

To ascertain the validity of the instruments for this study, the researcher presented the instruments, research questions and hypotheses to one (1) expert in the field of Measurement and Evaluation and two (2) experts in the Department of Science Education. The experts subjected the instrument to thorough screening, by checking the suitability and clarity of the items against the research questions and hypotheses formulated for the study. Various items on the instrument were also checked to be sure it's in line with the objectives of the study. Their advice, correction, and criticism were utilized to produce the final instruments that will be used for data collection.
The content validity of the Mathematics Achievement Test (MAT) was also carried out by the use of table of specification to ensure that all the content of mathematics for SS II as specified in the scheme of work were included in the instrument. The content validity was carried out by the use of table of specification (Table 1). The content of each concept was derived from the Nigerian Educational Research and Development Council (NERDC) Mathematics scheme of work for Senior Secondary school II (SS2). The content from which the items was adapted include topics like indices, Logarithm, Approximations, Sequence and Series, Quadratic Equations and Gradient of a Curve.

Table 1: Table of Specification of Mathematics Achievement Test

S/N.	Content	Knowledge (20%)	Comprehension (30%)	Application (40%)	Analysis (10%)	Total (100)
1.	Logarithm and indices	2	3	5	2	12
2.	Approximations	1	3	4	1	9
3.	Sequence and Series.	2	3	4	1	10
4.	Quadratic Equations	3	4	3	-	10
5.	Gradient of a Curve	2	2	4	1	9
	Total	10	15	20	5	50

Reliability of Research Instrument :

The reliability of the Mathematics Achievement Test (MAT) were determined using Kuder-Richardson-21 reliability methods. In using the method, Mathematic Achievement Test (MAT) were administered to 50 students in five secondary schools in Delta Central Senatorial District. 10 students from each school. The data collected with each of the instruments were subjected to Kuder-Richardson-21 formulae. The computation of the reliability of the Mathematics Achievement Test (MAT) yielded a reliability coefficient of 0.76. Based on these coefficients the Mathematic Achievement Test (MAT) were considered reliable for this study.

Method of Data Collection :

The researcher visited the sampled secondary schools that were selected for the study during school hours and seek for the principal's permission from various sampled schools. The researcher used the Teachers Characteristics Checklist (TCC) to collect information on teachers' characteristics such as teacher sex, qualification and teaching experience from the principal of each selected school. Thereafter the researcher with the help of five research assistants proceed to administer to the Mathematic Achievement test(MAT) to the selected students in the sampled school. The Mathematic Achievement test(MAT) was administered under strict examination condition. Both instruments were retrieved from the respondents immediately after completion.

The data collected for the study were collated and score before using them for the analysis. While collating the checklist mathematics teacher with N.C. E, B.sc(Ed), M.Ed., B.Sc.+ PGDE and Phd in Education were regarded as qualified teachers whereas teacher with HND, B.sc, M.sc and Phd in areas other field outside Education were categorised as unqualified teacher. For the teacher teaching experience, a teacher that has been teaching for past five or more years was category as experience teacher and teacher whose years of teaching is less than five years was category as nonexperience teachers.

Method of Data Analysis :

The data collected for the study were analyzed using mean, standard deviation and independent t-test. Specifically, the research questions were answered using mean and standard deviation while the hypotheses were tested using independent t-test. All hypotheses were test at alpha level of 0.05.

Results and Discussion :

Research One:

What is the difference in the mean achievement scores of students taught by qualified and unqualified teachers in mathematics in Delta North Senatorial District?

Table 2:

Mean Academic Achievement of Students taught Mathematics by Qualified and Unqualified Teachers

Variable	N	Mean	SD	Mean difference
Students taught by Qualified Teachers	545	34.15	14.32	
				15.83
Students taught by non-Qualified Teachers	183	18.32	8.16	
Total	728			

Table 2 demonstrates that students taught by qualified educators have a mean score that is much higher (34.15) than students taught by non-trained teachers (18.32). The standard deviation shows how variable each group is to some extent. The Table shows that students taught by qualified instructors have a larger standard deviation (14.32), indicating a broader range of results, whereas students taught by non-qualified teachers have a smaller standard deviation (8.16), indicating a more concentrated distribution.

Research Question Two

What is the difference in the mean achievement scores of students taught by experienced and inexperienced teachers in mathematics in Delta North Senatorial District?

Table3: The mean and standard deviation(SD) Comparing the Achievement of Students Taught by Experienced and Inexperienced Teachers in Mathematics in Delta North Senatorial District

Variable	N	Mean	SD	Mean Difference
Students taught by experienced Teachers	259	39.07	12.42	
				13.81

Students taught by inexperienced Teachers	469	25.26	13.58
Total	728		

Table 3 revealed the achievement of students taught by experienced and inexperienced teachers in mathematics in Delta North Senatorial District. Students taught by experienced instructors had a mean and standard deviation of 39.07 and 12.42, respectively, whereas students taught by less experienced teachers have a mean and standard deviation of 25.26 and 15.58, respectively. The standard deviation shows how variable each group is to some extent. The Table shows that students taught by inexperienced teachers have a greater standard deviation, indicating a broader range of results, whereas students taught by experienced teachers have a smaller standard deviation, indicating a more concentrated distribution. The average academic success of students taught by experienced instructors is greater than that of students taught by inexperienced teachers, as shown by the 13.81 mean difference between the two groups

Research Question three

What is the difference in the mean achievement scores of students taught by male and female teachers in mathematics in Delta North Senatorial District?

Table 4: The Mean Comparing Students Achievement by Male and Female Teachers in Mathematics in Delta North Senatorial District

Variable	N	Mean	SD	Mean Difference
Students taught by Male Teachers	318	31.36	15.28	
				2.11
Students taught by female Teachers	410	29.25	14.25	
Total	728			

The mean and standard deviation of the mathematics performance of pupils taught by male and female instructors in the Delta North Senatorial District are shown in Table 4. According to Table, students taught by male instructors have a mean and standard deviation of 31.36 and 15.28, respectively, whereas students taught by female teachers have a mean and standard deviation of 29.25 and 14.25, respectively. The standard deviation shows how variable each group is to some extent. The Table shows that students taught by male instructors have a greater standard deviation, indicating a broader range of results; on the other hand, students taught by female teachers have a smaller standard deviation, indicating a more concentrated distribution. The average academic success of students taught by male instructors is somewhat greater than that of students taught by female professors, as shown by the 2.11 mean difference between the two groups.

Testing of Hypotheses :

Hypothesis One:

There is no significant in the mean achievement scores of students taught by qualified and unqualified mathematics teachers in Delta North Senatorial District.

Table 5: The Independent t-test Statistics Comparing the Achievement of Students Taught by Qualified and Unqualified Mathematics Teachers in Delta North Senatorial District

Variable	N	Mean	SD	Df	t-cal.	Sig. (2-tailed)	Level of Sign.	Remark
Students taught by Qualified Teachers	545	34.15	14.32					
				726	14.20	0.000	0.05	Null hypothesis rejected
Students taught by non-Qualified Teachers	183	18.32	8.16					
Total	728							

Table 5 shows the independent t-test statistics comparing achievement of students taught by qualified and unqualified teachers in mathematics in Delta North Senatorial District. From Table, the computed t-value is 14.20 with p-value [Sig. (2-tailed)] of 0.00. Testing the null, the p-value is less than 0.05 level of significance. Consequently, the null hypothesis was disproved. This showed that there is a significant disparity in the mathematics achievement in the Delta North Senatorial District who are taught by certified and inexperienced instructors.

Hypothesis Two

What is the difference in the mean achievement scores of students taught by experienced and inexperienced teachers in mathematics in Delta North Senatorial District?

Table 6: The Independent t-test Statistics Comparing the Achievement of Students Taught by Experienced and Inexperienced Mathematics Teachers in Delta North Senatorial District

Variable	N	Mean	SD	df	t-cal.	Sig. (2-tailed)	Level of Sign.	Remark
Students taught by experienced Teachers	259	39.0656!Z\	12.42					
				726	13.52	0.000	0.05	Null hypothesis rejected
Students taught by inexperienced Teachers	469	25.2644	13.58					
Total	728							

Table 6 shows the independent t-test statistics the achievement of students taught by experienced and inexperienced teachers in mathematics in Delta North Senatorial District. From Table, the computed t-value is 12.55 with p-value [Sig. (2-tailed)] of 0.00. Testing the null, the p-value is less than 0.05 level of significance. Consequently, the null hypothesis was disproved. This showed that children in the Delta North Senatorial District who are taught mathematics by professional and inexperienced instructors vary significantly in their academic performance.

Hypothesis Three

There is no significant difference in the mean achievement scores of students taught by male and female teachers in mathematics in Delta North Senatorial District?

Table 7: The Independent t-test Statistics Comparing the Achievement of Students Taught by Male and Female Teachers in Mathematics in Delta North Senatorial District

Variable	N	Mean	SD	Df	t-cal.	Sig. (2-tailed)	Level of Sign.	Remark
Students taught by Male Teachers	318	31.3648	15.28403					
				726	1.92	0.06	0.05	Null hypothesis accepted
Students taught by female Teachers	410	29.2512	14.25365					
Total	728							

Based on the independent t-test statistics provided in Table 7, the computed t-value is 1.92 with a p-value (Sig. 2-tailed) of 0.06. Testing the null hypothesis, the obtained p-value exceeds the 0.05 level of significance. Consequently, the null hypothesis is accepted. This suggests that there is no significant difference in the achievement of students taught by male and female teachers in mathematics within the Delta North Senatorial District.

Discussion of Results :

- The first finding of this study underscores a significant contrast in the mean achievement scores of students taught by qualified and unqualified teachers in mathematics within the Delta North Senatorial District. Several potential explanations may account for this observed discrepancy. Firstly, unqualified teachers may lack the requisite skills and expertise necessary for effective mathematics instruction. This deficiency in proficiency could lead to inadequate teaching practices, thereby impeding students' comprehension and grasp of mathematical concepts. Additionally, unqualified teachers may lack practical experience and familiarity with proven teaching strategies specific to mathematics education, resulting in ineffective instructional approaches and subsequently lower achievement scores among their students.
- Moreover, a lack of commitment to ongoing professional development and improvement among unqualified teachers may further exacerbate

their inability to engage students effectively. Stagnation in pedagogical growth prevents them from staying abreast of evolving teaching methodologies and strategies essential for student success.

- This finding is consistent with the conclusions drawn by Owoeye and Yaro (2011), who emphasized the pivotal role of teachers' academic and professional qualifications in determining student achievement. It also aligns with the findings of Ezenweani (1998), who demonstrated that students taught by more academically qualified teachers tended to perform better in their examinations. Pereira (2013) further supports this assertion, affirming that students' academic outcomes are enhanced when they are instructed by academically and professionally qualified teachers who employ recommended textbooks and have undergone pertinent in-service training to refine their teaching practices and elevate their professional qualifications.
- The second finding of this study indicated that there is a significant difference in the achievement of students taught by experienced and inexperienced teachers in mathematics in Delta North Senatorial District. One plausible rationale for the variation in achievement among students instructed by seasoned versus novice teachers is the disparity in teacher expertise. Experienced educators typically possess a more profound comprehension of the subject matter, enabling them to offer students more comprehensive explanations and deeper insights into mathematical concepts. Their expertise equips them to anticipate and effectively address student misconceptions, resulting in enhanced learning outcomes.
- This assertion finds support in the research of Gibbons et al. (2007), who highlighted a significant correlation between teachers' experience and students' academic achievement and attitude. They noted that students taught by more experienced teachers attained higher levels of achievement, attributed to the seasoned teachers' mastery of subject content and accumulated classroom management skills. Likewise, Okpala (2006) emphasized that experienced teachers adeptly manage classroom dynamics, establish effective routines, and address individual student behavior, thereby fostering improved academic achievement and attitudes among students. He concluded that teacher experience exerts considerable influence on students' academic performance and outlook.
- The third finding of the study suggests that there exists no significant difference in the academic performance of students instructed by male and female teachers in mathematics within the Delta North Senatorial District. One plausible interpretation for this outcome could be that both male and female teachers within this district employ similar teaching methodologies in mathematics. It is conceivable that both genders demonstrate equal proficiency in elucidating concepts and facilitating student comprehension, thus resulting in a lack of discernible discrepancy in achievement levels among students taught by male and female instructors. This observation aligns with the research of Yoloye (2004) and Francis (2007), who posited that the gender of a teacher does not exert a discernible impact on student performance, which is often considered a pivotal determinant of academic achievement. Additionally, this finding is corroborated by the work of Okoruwa (2009), who uncovered that the gender of a teacher positively influenced the mean achievement scores of pupils in the realm of science; notably, male teachers exhibited greater effectiveness compared to their female counterparts.

CONCLUSION:

Based on the findings of this study, the following conclusions were drawn:

It was found that qualification of teachers influences students' achievement in Delta North Senatorial District. It was therefore concluded that teacher qualifications are important factor that influence student academic achievement in mathematics. This emphasizes the potential impact of teacher experience on student learning outcomes. It was also concluded that sex was not a determining factor in student achievement in mathematics. This thus, suggests that, among the students, both male and female teachers' benefits equally from teachers' characteristic role that enhance learning.

Recommendations :

- Following the results of this study, the following recommendations were made:
- Ministry of Education should be advised to employ qualified Mathematics teachers to teaching Senior School Mathematics in, order, to enhance and improves students' attitude and achievement in Senior School Mathematics.
- Teachers should be given good in-service training to bridge the gap of inexperience teachers and enhance students' attitude and achievement in Senior School Mathematics.

REFERENCES :

1. Abe, T. O. & Adu, E. I. (2013). Influence of qualification on development and assessment of computer programmed instructional package on energy concept in upper basic technology in Ekiti State. *Journal of Science and Technology, 3* (6): 611-618.
2. Adedayo, J. O. (2012). Improving STEM Education in Nigeria: The challenges of Science Educators.52nd STAN Proceedings. *Reforms in STEM Education* (In Okechukwu, S. A. (Ed.). Heinnemann Educational Books Publishers, Ibadan: Nigeria.
3. Aina, J. K., Ogundele, A. G., & Olanipekun, S. S. (2013). Students' proficiency in English Language relationship with academic performance in science and technical education, *American Journal of Education Research*, 1(9), 355-358.
4. Akinsolu, A. O. (2010). Teachers and students‟ academic performance in Nigerian secondary schools: Implications for Planning. *Florida Journal of Educational Administration and Policy*, 3(3), 86 – 103
5. Akinyele, D. (2011). *Science and technology education in Africa focus on seven sub-Saharan Countries*. Lagos: University of Lagos Press,

Lagos

6. Ashimole, A. U. (2011). Developing teaching man power through emerging myths and realities in Nigeria institutions. International conference on teaching, learning and Change, *International Association for Teaching and Learning (IATEL)*
7. Beilock, S. L., Gunderson, E. A., Ramirez, G., & Levine, S. C. (2010). Female teachers' math anxiety affects girls' math achievement: *Proceedings of the National Academy of Sciences, USA*, 107(5), 1060-1063.
8. Busato, V. V., Prins, F. J., Elshout, J. J., & Hamaker, C. (2000). Intellectual ability, learning style, personality, achievement motivation and academic success of psychology students in higher education. Personality and Individual Differences, 29, 1057–1068
9. Chamorro-Premuzic, T., & Furnham, A. (2013). Personality traits and academic examination performance. European Journal of Personality, 17, 237–250.
10. Chirume, S., & Chikasha, D.A. (2014). A Critical Analysis of the Factors Affecting Achievement in Secondary School Mathematics in Zimbabwe: A Case Study of Gweru District.
11. Commeyras, M. (2013) "Promoting a culture of reading" *The Comet Thursday*, February 13, 32.
12. Driessen, G. (2017). The feminization of primary education: influences of teachers' sex on pupil achievement, attitudes and behaviour. *International Review of Education*, 53(2), 183-203
13. Ebere, I., Loretta, N. N. and Ngozi, J. A. (2016) Influence of teachers' characteristics on academic achievement of secondary school biology students. *British Journal of Science*, 13(2): 33-44
14. Eryilmaz, H. (2014). The influence of peer instruction on high school students' Achievement and attitudes toward Mathematics. *Ph.D thesis of Middle East Technical University.*
15. Ezenwani, L. N. (1998). *Factors influencing Chemistry Masters Preference of Urban to Rural Areas*. Delta State University, Abraka..
16. Francis, A. A. (2017). Student and teacher related variables as determinants of secondary school students academic achievement in chemistry. *Journal of Pendidikan*, 32(2007). 3-18
17. Gibbons, S.; Kimmel, H. and O'shea M. (2017). Changing teacher behaviour through staff development: implementing the teaching and content standards in science. *School Science and Mathematics*, 97(6):302 – 310.
18. Gibson, S. and Dembo, M. (2017). Teacher Efficacy: A Construct Validation. *Journal of Education of Psychology*, 76, 582-594.
19. Gonzuk, S. and Chargok, H. (2011), Gender differences in science: Parallels in interest, experience, and performance, *International Journal of Science Education* 9:467-481.
20. Irvine, J. J. (2011). *Caring, competent teachers in complex classrooms*. Washington, DC: AACTE Publications
21. Krecie, M. J. & Grimek, M. I. (2015). The reasons students choose teaching professions. *Educational Studies*, 31 (3), 265 – 274
22. Lingard, B., Martino, W., Mills, M., & Barr, M. (2012). *Addressing the educational needs of boys—strategies for schools and teachers*. Canberra: DEST.
23. Mensah, J. K., Okyere, M., & Kuranchie, A. (2013). Student attitude towards Mathematics and performance: Does the teacher attitude matter? *Journal of Education and Practice, 4*(3), 132-139.
24. Obadara, N. O. (2015). A prospective longitudinal study of psychological predictors of
25. Okey, S. M. (2012). Teachers' Training/retraining: A vital tool for progressional development in Nigeria. In U.M.O. Ivowi and B. B. Akpan (Eds.). *Education in Nigeria, from the beginning to the future, Lagos Foremost Educational Service* Ltd, p. 257-266.
26. Okoruwa, T. O. (2009). The Influence of Some Teachers' Characteristics on Pupils' Performance in Primary Science. *Unpublished M. Ed Project*. University of Ibadan
27. Okpala, N. P. (2016). Teacher attitudinal variables in instructional assessment practices as correlates of learning outcomes in Mathematics. *Unpublished Ph.D Thesis*. University of Ibadan, Ibadan.
28. Owoeye, J. S. and Yara, P. O. (2011). School location and academic achievement of secondary school in Ekiti State, *Nigeria Asian Social Science*, 7(5) 170-175
29. Pereira, F. H. (2013): "A study on Brazilian web journalists' professional careers". *Communication & Society*, 26 (4), pp. 127 151.
30. Senechal, D. (2010). *Why Teaching Experience Matters*. Available at: http://www.ny. chalkbeat.org. Accessed on: 1-7-2022.
31. Shittu, R. O. and Onaite, R. A. (2015). Teachers' attitudes: a great influence on teaching and learning of social studies. *Journal of Law, Policy and Globalization* 42: 131-137
32. Smith, S. (2014). Teaching and the gender imbalance: Do we need more mates? Retrieved on 17th May, 2022, from www.teachers.ash.org.au/bce/Research %20report.htm.doc.
33. Sokal, L., Katz, H., Sych-Yereniuk, A., Chochinov-Harder, L., Adkins, M., Grills, T., Stewart, C., & Priddle, G. (2015). *Male reading teachers: influences on inner-city boys*. Winnipeg: University of Winnipeg.
34. Thomas, K. M. (2014). Standing in the schoolhouse door: Teacher perceptions of mobile phones in the classroom. *Journal of Research on Technology in Education*, 46(4), 373–395
35. Thomas, S. Dee (2016). *How a teacher's gender affect boys and girls*.
36. Yang, D. H. (2010). Gender and classroom learning*: Psychology in the Schools*, 22, 08–223
37. Yoloye, A. (2014). Intervention Strategies in Promoting Women Participation in Science and Technology in Erinosho. *In Perspective on Women in Science and Technology in Nigeria*. S. Y. (Ed), Ibadan: Sam Bookman Education and Communication Services pp. 78-95. Jpend32[01].pmd 18 0