IJCRSSSL International Journal of Current Researches in Sciences, Social Sciences and Languages

Volume: 03 | Issue: 02 | 2023 | Open Access | Impact Factor: 5.735

The relationship between Teachers' Qualification and the impact on Student`s Academic Achievements in Senior Secondary School Mathematics in Taraba state

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Abstract: This study examined the analysis of the relationship between teachers qualification and the impact on Student`s Academic Achievements in Senior Secondary School Mathematics in Taraba state. Nigeria. The study adopted simple survey design. A review of related literature to the study was carried out. Data collected and collated were based on a set of Scales in the Questionnaire Mathematics-Teachers-Qualification - Related Scales (MTQRS) consisting of twenty four (24) items and was administered to eighteen (18) public schools across the State; three LGA from each senatorial zone of the State, consisting of nine (9) LGAs with sample size of 900 students. These instruments were validated and found to be reliable at 0.89 and 0.91 respectively. One hypothesis were generated and tested at 0.05 significant level and Data were analyst using Chi-square and Spearman rank correlation Statistical Method through SPSS statistical Software computer package. The Null hypothesis was rejected and the alternative upheld. Findings revealed that there is significant strong positive relationship between instructional material usage and Students Achievement in senior secondary school Mathematics. Hence from the findings made, the researcher drew conclusion and made useful recommendations which he hope if adhere to, will help to stimulate and enhance academic achievement in senior secondary schools mathematic

Keywords: Questionnaire, Student`s Achievements, Qualification, Spearman rank correlation, Chi-square, SPSS.

INTRODUCTION

Over many decades, the use of mathematical techniques has been gaining a lot of grand in social and biological science and as well as in the field of commerce and management. In fact the exactness and precision of mathematical language, methods and concepts have made it possible to explore large areas of research in these subjects which remained hidden so far from the keen eyes of the researchers. Relentless time, one could say that mathematics is probably the most convenient shoulder to lean on for not just pure sciences but also subjects like commerce and economics. However, because of it's important to the society, there is need to break a new ground to fashion out which ways the subject could be well understood by the students to maximize their performances. Nevertheless, It is observed in decade(s) that secondary school student's achievement have been very low in their final examinations and class activities in the subject. The low achievement may not only be as a result of any changes in content of mathematics, but also lack of instructional materials usage by the teachers in delivering the content. Therefore the role of mathematics cannot be over-emphasized in life-like activities, students' academic achievement, Nation building and National deployment.

Mathematics Education in Nigeria seems to be passing through the furnace of transformation. This could be inferred from the efforts of the Mathematical Association of Nigeria (MAN) in the last few decades to popularize the teaching and learning of mathematics at all levels of instruction. Consequently, the mere knowledge of mathematical concepts without the corresponding knowledge of their application to real life seems to be fading away. This among other things has influenced human learning and challenged educators, especially in the area of mathematics education, to experiment with innovative instructional methods for core curriculum across all levels of educational system. In Nigeria, mathematics has continued to be one of the core subjects at all levels of education so that, every child will acquire

appropriate mathematical skills and knowledge to solve human problems in all spheres of life (Nigerian Educational Research and Development Council [NERDC], 2008). Learning and understanding of some mathematics topics have not only been frustrated by the nature of the topics but also by clumsy methods and instructional materials used (Etukudo, 2000; Etukudo & Utin, 2006). The resultant effect is the poor achievement level of students both in internal and external examinations. In view of this, Iji (2002) in trying to find solution to this ugly situation of poor performance in mathematics in public examination identified teaching techniques by the teachers as one of the contributory factors. This point to the fact that good teaching helps the learners to learn more qualitatively and quantitatively and poor teaching would lead to poor learning and poor performance. One may associate this poor mathematics achievement by Nigerian students to some pedagogies adopted (Salau, 2002). He lamented on poor achievement of students in mathematics and points out that introduction of suitable instructional materials and methods are the likely solution. Literature and available records have shown a variety of efficacious innovative teaching strategies that have been identified by researchers to alleviate this problem of poor performance of students in mathematics, but their performance continues to deteriorate year after year. However, none of these research efforts has sought solution to this problem from the dimension of using student-centred and home-based activity approach to teaching- which is Problem based learning (PBL). According to Shaibu and Usman in Kurumeh (2006), involvement of students in the teaching and learning process which means a departure from the traditional methods of teaching is another means of ensuring active learning in science and mathematics. The call for a departure from traditional methods of teaching with its attendant poor performance indices has been sounded by researchers (Okebukola, 2002; Iji, 2005; Etukudo & Utin, 2006; Abakpa, 2011; Mtsem, 2011). This is with the intension of obtaining admirable results. However, this departure cannot come only through such means as Computer Assisted Instruction, Mastery learning, Logo and Basic Instructional Packages as well as Contextual Strategy in teaching mathematics. There is still poor performance of students in public examinations yearly. Thus, research on instructional strategies that will improve the quality of learning of mathematics has continued to generate interest among mathematics educators and scholars as the conventional method has failed to meet the learners' needs. The implication of these lapses identified in the conventional teaching method is that non-traditional teaching methods that will improve students' achievement have to be explored. The low achievement in mathematics by the students has been a source of concern to the public and mathematics educators in view of importance attached to mathematics as a veritable tool for the overall development of the individuals and the society at large. Reports on various teaching techniques indicate that they improve students' learning and achievement. Yet results from public examination bodies on students' achievement are low. Thus, the need to explore other strategies that may enhance students' achievement in mathematics. As students become increasingly poor in mathematics achievement test, they are less inclined towards a learning approach which requires them to be self-directed and motivated. Mathematics should be ideal for students working in groups and can benefit them as they are more likely to brainstorm and come up with ideas and thoughts before they reach possible solutions.

Idoko (2008) revealed that unprofessional and unqualified basic science teachers using inappropriate teaching methods in conveying practical skills to students are responsible for lack of interest and poor performance of students in basic science practical. This indicates that teacher qualification and nature of skills in conveying practical skills among the factors affecting performance of students in mathematics.

Problem Statement/Justification

One of the major problems facing education sector in Nigeria is the low level of the performance of secondary school students in both local and standardized examinations. It has become a great concern for researchers, educators and all education stake-holders over the years. It was observed that students usually fail in examinations owing to improper teaching methods and lack of essential teaching aids for instructional delivery. (Afolabi, 2009). This study therefore deemed it necessary to look specifically into how teachers qualification contributes to academic achievement of secondary school students in Mathematics.

Mathematics as the bedrock of all scientific and technological advancement is a pre-requisite to almost all courses in colleges of education, polytechnics and universities. Mathematics is a human invention, borne out of human mind, resolve to solve human problems. Thus as a creation of mind, it is concerned primarily with ideas, process and reasoning. Of all the factors that affect teaching-learning in the educational system of any society, teachers qualification seem to constitute the primary issue. Perhaps, the non-consideration of teachers qualification among others seem not to have brought about an effective teaching-learning, and could have resulted in students' poor achievement in WAEC and NECO examinations. It is surprising that despite the efforts of government, to improve the standard of education by providing the required human and material resources for the implementation of education at all levels, students' performance in Mathematics in internal and external examination is very poor in recent years. This situation makes one to wonder what could be the causes of this persistent failure of students in mathematics examination. Some scholars attributed this high failure rate in mathematics to various factors which could be institutional and non- institutional. Hence, the need to adopt the employment of quality teachers that would positively influence candidates' achievement in both internal and external Examination. Therefore, the problem to be investigated in this study posed as questions are: Would students improve upon their academic achievement in mathematics if they are taught by qualify teachers? Is considered. In support Okolie, Elom and Inyiagu (2014), observed that poor performance of students in basic science (mathematics) has been so high in many Nigerian public schools in the recent years due to lack of qualified teachers. If this is not checkmated, our Science and Technology related subject graduates from the post-primary schools may not be employable and those who may further in their University Education may experience difficulties because of their background. Consequently, our educational system will not attain its objective of producing qualified and competent product in science education. Slow learning, low enrolment, dropouts and poor attention span a poor performances in SSCE are the focus of the problems for this study. The problems listed above motivate the researcher's decision to investigating if the predominant problems could be attributed to teacher's qualification in teaching mathematics in school. The problem which this study intends to solve, is what then is the impact of teachers' qualification on mathematics students' academic achievement in Taraba State-Nigeria?

OBJECTIVE OF THE STUDY

The study examined the relationship between Teacher's qualification in teaching and students` academic achievement in senior secondary school mathematics.

SIGNIFICANCE OF THE STUDY

The study is mainly focused on the relationship between Teacher's qualification in teaching and students` academic achievement in senior secondary school mathematics. It is hoped that, the study would help the educators, government, industries, and curriculum planners toward holistic realization of the student's potentialities in school. They will understand the significant of the use of instructional materials for optimum academic achievement. Parents will use the knowledge of the results to involve and advise their children and wards at home in terms of scheduling engagement and responsibilities for them. Mathematics teachers and counsellors would also be assisted by the outcome of this study to sequence academic activities and the attainment of the school goals. However, mathematics teachers will be armed with the requisite information about the various factors that influence students' academic performance and foster ways to enhance students' interest in the teaching and learning process. Also to improvised adequate teaching and learning equipment for the effective teaching and learning of mathematics.

Furthermore, findings from this study maybe of utmost importance to educational and curriculum planners because it would act as a feedback or evaluation to the curriculum implemented, to ascertain if the required experience, expertise, qualification stated for entry into secondary teaching, meets the

educational needs of the learners, to make further prescription or better analyse the effects of teachers attitudes on students' Academic performance.
Finally, it will be of great importance to future researchers who would seek reference on recent literature review and to give an up to date analysis on the research topic and equipment for teaching and learning of mathematics.

RESEARCH QUESTION

To what extent does the teacher's qualification relates to student's achievement in senior secondary school Mathematics?

RESEARCH HYPOTHESIS

In order to achieve the purpose of this study, this hypotheses is formulated to guide the researcher.
There is no significant relationship between teacher's qualification and student's achievement in senior secondary school Mathematics.

SCOPE OF THE STUDY

This study is however delimited to senior secondary students (SS2) in eighteen (18) public schools across the State; three LGA from each senatorial zone of the State, consisting of nine (9) LGAs in Taraba state in North-Eastern part of Nigeria.

REVIEW OF RELATED LITERATURE

The reviews of related literature focus on the following sub-headings

- Objectives of senior secondary school general mathematics.
- Taxonomy of educational objectives
- Concept of teacher qualification
- Effect of teachers qualification on mathematic students' performance
- Students' perception of mathematics and academic achievement.

OBJECTIVES OF SENIOR SECONDARY SCHOOL GENERAL MATHEMATICS

Apart from the general aim of secondary school education in Nigeria which is geared towards education preparing individuals for useful living in the society and higher education as important in

- Providing trained manpower at sub professional level in applied sciences, technology and commence;
- Inspiring students' with a desire for self-improvement and academic excellence;
- Providing technical knowledge and vocational skills necessary for agricultural, industrial, commercial, and economic development.

The Federal Republic of Nigeria (FRN) (2006) specified the objectives of the senior secondary school general mathematics curriculum to include the test of the following:

- Habit of effective and reflective thinking;
- Communication through symbols, expression and graph;
- The ability to distinguish between relevant data;
- Computational skills;
- The ability to recognize word problems and translate them into mathematics expressions before solving them with related mathematics knowledge;
- The ability to be accurate to a degree relevant to the problem at hand;
- Precise, logical and abstract thinking.

TAXONOMY OF EDUCATIONAL OBJECTIVE

According to Bloom (1956) in Esu, Enukoha and Umoren (2006), the major categories in educational objectives is the Taxonomy of abilities and skills that can be ranked from simple to complex beginning from memory, comprehension, application, analysis, synthesis and Evaluation. These stages are developmental because it is only what one understands, that he can apply.

Cognitive objectives are those objectives, which emphasize remembering or reproducing something, which has previously been learnt. They also include objectives which have involve the solution of some intellectual problems for which the individual has determined the essential problems and recorded the materials or combined it with some ideas, methods and strategies.

According to Krathwohl (1964) in Esu, Enukoha and Umoren (2006), the major categories in the affective domain of the taxonomy of educational objective includes receiving, responding, value, organization and the characterization by a value or value complex. The affective domain includes the objectives which emphasize tone, emotion, or a degree of acceptance or rejection. They vary from simple attention to selected phenomena to complex, but internally consistent qualities of characters and conscience.

A large number of such objectives in our educational literature are expressed as interest, attitude, appreciation, values, emotional sets and biases.

Sampson (1966) in Esu, Enukoha and Umoren (2006) opined that, the major categories in the psychomotor domain of the taxonomy of educational objectives include the following: perception, set, guided responses, mechanism, complex overt responses and origination.

The psychomotor domain expresses objectives which emphasize muscular and motor skills, some manipulations of objects or some acts that requires neuromuscular co-ordination.

Such objectives when found on our educational literature are related, to handwritings speech, physical education as well as trade and technical courses.

VALUES OF TAXONOMY OF EDUCATIONAL OBJECTIVE

- It makes for a tightening of the languages of educational objectives such that, the objectives give direction to the learning process and determine the evidence to be used in appraising the effect of the learning experience.
- It enables authors of educational objectives to know exactly what they mean and the learners to equally have a clear view of what is intended.
- It provides a convenient system of describing and comparing test items, examination technique and evaluation instruments.
- It makes possible for the compression and studying of educational problems as well as serve as a tool clarifying and organizing educational research results:
- It envision the possibility that we select the principle of classifying educational outcome which will reveal a real order amongst those outcomes.

SECONDARY SCHOOL STUDENTS' PERCEPTION OF MATHEMATICS AND ACADEMIC ACHIEVEMENT

Perception according to Monbipon (1986) refers to an innate feeling which leads to the development of attitude. He asserts that, attitude formation is built on already existing perception about a person, a thing or an event.

Relating perception to learning of mathematics, Monbipon (1986) in Fredrick (1980), asserts that students perceived mathematics from several influences, He pointed that students' perception of mathematics could be based on experience, age, other student perception, societal perception and surrounding learning circumstances.

Monbipon (1986) in Fredrick (1980), assert that perception based on experience occur in an instance where a students after being taught mathematics using the available resources and skills could not still understand mathematics. He asserts that is generally not out of place for such a students to come to a

conclusion that mathematics is difficult. He asserts also that they cannot understand mathematics no matter how much they try.

Itah (1991) opines that perception is an inner feeling drawn after an experience through the senses. He asserts that we perceive by touching, seeing, smelling. he posits that most school children live on assumption that certain subjects are difficult, but the number of students who really perceives the school subject and concludes on its difficulty, is the number of students who took time to time to encounter the subject through experiences. He contends that perception instigates other innate feelings and hence becomes motivator. He maintains that a positive perception generates interest and inculcates positive attitude in students while a negative perception generates stress, fatigue and discourages participation. He also asserted that for which most school children perform poorly in mathematics is because their perception of mathematics is poor and built upon fear of event encountering the subject to see its level of difficulty.

Falowiyo (1989) contends that most students' perception of mathematics is determined by students' experience from school variables. Notably among these variables is the teacher factor. He maintained that an unqualified mathematics teacher with poor teaching methods will tend to make students have negative perception of mathematics.

In study with 250 students in Oyo State, he found that interest and perception has a direct relationship. He maintained that the level of interest a school child has on a school subject or a classroom activity depends on his/her perception of that subject or class activity.

Jackson (1984) posits that meaningful learning is determined by the level of readiness of the learner. He opined that students' readiness must be in line with physical and psychological readiness. He contends that a child seated quietly in a class could be seen to be physically ready to learn but his psychological readiness depends on his anticipation and emotion at that point in time. He maintained that student's perception out-weighted other psychological factors like emotion fear. He asserts that this position was taken based on his findings that perception makes students to draw certain conclusion about a school subject and that when it is done, it becomes difficult for the child to depart from such conclusion.

CONCEPT OF TEACHER QUALIFICATION

Merriam - Webster Dictionary defines 'qualification' as a specialized skill or type of experience or knowledge that makes someone suitable to do a particular job or activity. Therefore, teachers' qualification is a particular skill or type of experience or knowledge someone possesses to make him or her suitable to teach. Teachers' qualifications could, therefore, mean all the skills a teacher required to teach effectively. Such skills include formal education, experience, subject matter knowledge, pedagogy studies, duration of training, certificate/licensing and professional development (Zuzovsky, 2009). Someone might have a teaching certificate at hand but without adequate knowledge of subject matter, this individual has no teaching qualifications yet. Similarly, someone without proper knowledge of pedagogy or someone who spent few years in training (Darling-Hammond et al, 2001) without completing the required years does not possess teacher qualifications. Professional development and experience also count for teacher's qualifications because several studies have revealed this (Helk, 2007). Qualification is one of the critical factors that drive students' academic performance. Zuzovsky, (2009) also observed that one of the most important factors in the teaching process is a qualification of the teacher. The perspective of was that teachers' qualifications can go a long way to bring about students' higher academic achievement. Teachers' profession relates to competence in instruction and management of students and materials in the classroom. Teachers' qualifications, therefore, might not only be the certificate someone is holding as erroneously conceived by some people. Teachers' qualifications are more than just holding a certificate of any institution. Zuzovsky, (2009) in her study on "Teachers' qualifications and their impact on students' achievement findings from TIMMS-2003 data in Israel 'ties teachers' qualifications to seven indicators that are;

- Teachers' formal education

- Teachers' education in the subject matter of teaching (in-field preparation)
- Teacher education in pedagogical studies
- Duration of the preparation period
- Certification and licensing status
- Years of experience
- Preparation in professional development activities

A qualified teacher should focus on learning which strengthens the capacities of children to act progressively on their own behalf through the acquisitions of relevant knowledge, useful skills and appropriate attitudes; and which creates for children, and helps them create for themselves and others, places of safety, security and healthy interaction (Bernard, 2009). With this regard, early childhood teachers should be highly qualified and have relevant trainings for them to offer good and strong foundation to young children. According to Agyeman (2003), a teacher who does not have both academic and professional qualification would have a negative influence on teaching and learning of his/her subject which subsequently affects the performance of students. In this study, academic qualification referred to the level of education achieved whereas; professional training was related to whether a teacher is specialized in early childhood education or not. These two components are interrelated and both of them determine the quality of service a teacher can deliver to his/her students. Reuda (2002) believes that qualified teacher should be able to upgrade students" capability effectively, enhance their knowledge and skills, and improve their behaviour and attitude and then make contributions to the organizational goal. Qualified teachers recognize the teaching approach that appreciates the fact that children have unique interests that need to be considered for any meaningful achievement. Gichuba, Opasta and Nguchu (2009) Such a situation begs the question of how the quality of teaching looks like in Rwandan nursery schools where most caregivers are volunteers who have completed only three years of secondary education (MINEDUC, 2010).

EFFECT OF TEACHERS' QUALIFICATION ON STUDENTS' ACHIEVEMENT IN MATHEMATICS

Education is a key component of human quality essential for generating high incomes and sustainable socio-economic development. It is characterized as an essential ingredient in poverty eradication as described by Ogawa (2010). According to UNESCO (2007), education was formally recognized as a human right since the adoption of the Universal Declaration of Human Rights in 1948. The Dakar Framework for Action (2000) in Okpala, (2019) declared that access to quality education was the right of every child. It affirmed that quality was at the heart of education. According to Samoff (2007) (as cited in Ogawa (2010) the mastery of curriculum is measured by national examination and the best indicator of high quality education is a high score on the national examination. According to France and Utting (2003), good quality early education is essential for educational efficiency. Children acquire the basic skills, concepts and attitudes required for successful learning and development prior to entering formal education system thus reducing the chances of failure and lay a foundation of life-long learning. The Australia education policy framework (2013) states that children must enjoy best possible conditions in their early educational and developmental years and that includes qualified educators will help support early childhood education system. To reap the most form these early years of development the early childhood development education centres should ensure quality standards of education. Quality of education as defined by Myers (2006) in Okpala, (2019) in an article 'Quality in Program of Early Childhood Care and Education', states that; although there is no single definition of quality there are two principles that characterize most attempts to define quality in education; first is the learner's cognitive development as the major explicit objective of all educational systems, the success with which systems achieve this is their quality; the second emphasis is on educational role in promoting values and attitudes of responsible citizenship and in nurturing creative and emotional development. The achievement of these

objectives is difficult to assess and compare across countries. Teacher qualification may affect students' academic achievement, according to a study conducted by Abe (2014) in Sky Journal of Education highlighted three ways in which teacher qualification can be quantified that is;

- Level of education;
- Years of experience in preparation of subject matter and pedagogy and;
- Certification in their expertise area and their on-going professional development.

In South Africa, a study carried out by Buddin and May (2009) on the teacher licensure test scores and other teacher attributes effect on elementary student achievement showed large differences in teacher quality across school district. Teacher license test scores were unrelated to teacher success in the classroom; student achievement was not related to the teachers' advanced degrees, student achievement increases with teacher experience but the correlation is weak.

In America, Dan and Dominic (2010) reporting on evaluating the effect of teacher Degree Level on educational performance in America released by the National Commission on Teaching and America's Future offers a general indictment of the teaching profession. The report states that many newly hired teachers are unqualified for the job. In particular, the commission reports that one fourth of high school teachers lack college training in their primary classroom subject and that teacher recruiting and hiring practices nationwide are 'distressingly haddock'.

Teacher qualification may influence student achievement in urban secondary schools. In South Africa, Buddin and May (2009) studied teacher qualifications and student achievement in urban elementary schools. The study examined the teacher licensure test scores and other teacher attributes effect on elementary student achievement. They used longitudinal approach. The results showed large differences in teacher quality across school district. Teacher license test scores are unrelated to teacher success in the classroom; student achievement is not related to the teachers' advanced degrees, student achievement increases with teacher experience but the correlation is weak. In Florida Journal of Educational Policy Dan and Dominic (2010) examined the number of qualified teachers and the relationship to students' academic performance in public secondary schools in a sample of Local Government Areas in Nigeria. This descriptive study used a post-hoc dataset. An instrument titled "Quantity and Quality of Teachers and Students' Academic Performance" was used for the study. Findings of the study showed teachers' qualifications, experience and class size were significantly related to students' academic performance. These finding were used to guide planners about the need for qualified teachers to facilitate effective teaching and learning in secondary schools in Nigeria. In Nigeria, Owalabi (2012) examined the effect of teacher's qualification on performance of senior secondary school physics students in physics. The purpose was to determine whether the status of the teacher has any impact on the performance of students in physics. The study used descriptive survey design. Data was collected using questionnaires and document analysis and was analysed using inferential statistics. The study found that students taught by teacher with higher qualifications performed better than those taught by teacher with low qualifications. The results also revealed that students taught by professional teachers performed better, however teachers' experience in teaching the subject was of significant advantage in physics. Based on the results it was recommended that students in the year of examination should be taught by experienced teachers. Abe (2014) in a study on effect of teacher qualifications on students' performance in Mathematics in secondary schools; the study examined the effect of teacher's qualifications on student performance in mathematics. Three hundred students were randomly selected from ten schools which were purposefully selected. The results showed that a significant difference existed between students taught by professional teachers and non-trained teacher. It was recommended that only trained qualified teachers should teach mathematics in secondary schools. Training of un-trained teachers helps them to improve their teaching methods and in turn help to improve performance of students in mathematics.

A study in Kenya by Musau and Abere (2014) examined performance of teachers on subject such as Mathematics, Technology and science in secondary schools of Kitui. The study looked into the extent to which teacher qualification influenced students' academic performance in Science Mathematics and

Technology subjects. The study applied ex-post-facto survey research design. Data was collected using questionnaire and document analysis. It was analysed using descriptive and inferential statistical tools. The study found that there was no significant difference in performance of students taught by teachers who had undergone refresher courses and those taught by teacher who had not undergone refresher courses as they were both graduates. The study recommended that teachers should undergo more regular in-service and refresher training of Science Mathematics and Technology to enable them embrace and conform to the emerging technologies and teaching methods.

These studies have shown that there is some relationship between teacher qualification and students' academic achievement; these studies were carried out in secondary schools with specific subjects. The studies have reported that teachers without being expert of the said subjects would not perform to the same level as qualified teachers. The studies reviewed dealt with teacher qualification and experience influence on student performance with a lot of focus on the secondary education level.

Afangideh (2011) asserts that teacher qualification influences students' performance and professional preparation is needed by chemistry teachers through adequate and informed exposure to courses for teaching effectiveness. The Education and Training Commission of Europe (2010) also points out that teacher qualification is an essential factor that provides learners with personal fulfilment, better social skills and more diverse opportunities. Lochran (2001) in Okpala, (2019) argues that "the outcome" question is what currently motivates teacher education. She set down three ways in which outcomes of teacher education are constructed. One of them is long term impact outcome (refers to the relationships) between teacher qualifications and student learning. Teacher qualification encompasses teachers' scores on tests and examinations, their years of experience, the extent of their preparations in subject matter and what qualifications they hold in their area of expertise and their on-going professional development. He went on to posit that the relationship between teacher qualification and student learning as the percentage of variance in student scores accounted for by teacher's qualifications when other variables are held constant or adjusted.

Specifically, highly qualified teachers are required to;

- Have sufficient subject matter knowledge and teaching skills.
- Hold at least a National Certificate in Education (NCE).

Among teacher behaviours that have been shown to lead to high student achievement are efficient classroom management skills, systematic teaching approaches providing clear teaching goals and using advance organizer.

MATERIAL AND METHODS

Study Design: The study adopted simple survey design. Data collected and collated were based on a set of Scales in the Questionnaire Mathematics-Teacher-Qualification - Related Scales (MTQRS) consisting of twenty four (24) items and was administered to eighteen (18) public schools across the State; three LGA from each senatorial zone of the State, consisting of nine (9) LGAs with sample size of 900 students. These instruments were validated and found to be reliable at 0.89 and 0.91 respectively. One hypothesis were generated and tested at 0.05 significant level.

STATISTICAL ANALYSIS

Data were analyst using Chi-square and Spearman rank correlation Statistical Method through SPSS statistical Software computer package version 21 to test for the relationship between the dependent and independent variables at level $p < 0.05$ considered as the cut off value for significance.

Description of study area

The area for this research was consist of six (9) local Government areas which includes Bali-Wukari-Takum-Donga-Jalingo-Gassol-Zing-Ardo-kola-Gashaka-LGA. Three from each senatorial zone of Taraba State.

IJCRSSSL International Journal of Current Researches in Sciences, Social Sciences and Languages

Volume: 03 | Issue: 02 | 2023 | Open Access | Impact Factor: 5.735

RESULTS

HYPOTHESIS HO

There is no significance relationship between teachers' qualification and students' Academic Achievement in Mathematics.

S/N	Affirmative (SA+A)	Decline (D+SD)	TOTAL	DF	X^2 -Cal	X^2 -Crit.	Level of sign.	Decision	QUALIFICATIONS
1.	119	61	180	4	15.1056	9.488	0.05	Rejected	TCII
2.	104	76	180						NCE
3.	91	89	180						Bsc
4.	120	60	180						Msc
5.	98	82	180						Ph.D
Total	305	195	900						

Table 1 Chi-Square Analysis on the relationship between teachers' qualification and students' Academic Achievement in Mathematics.

Source: SPSS version 21 Computation (2023)

The table above revealed that the X2 calculated value of 15.1056 is higher than the X2 critical value of 9.488 at 0.05 level of significance. The null hypothesis is therefore rejected. This implies that there is a significant relationship between teachers' qualification and students' Academic Achievement in Mathematics.

Table 1.2 Pearson Correlation of Teachers Qualification and Students Achievement in Mathematics

		Qualification	Achievement
Teachers Qualification	Pearson Correlation	1	0.6897
	Sig.(2-tailed)		0.000***
	N	900	900
Academic Achievement	Pearson Correlation	0.6897	1
	Sig.(2-tailed)	0.000***	
	N	900	900

Source: SPSS version 21 Computation (2023)

Table 1.2 shows that there is significant Strong positive relationship between Teachers qualification and Academic Achievements in Mathematics. This implies that, The teachers qualification have positive impacts on Academic Achievements of senior secondary school students in mathematics.

The investigation using Pearson product moment correlation shows a Strong positive relationship between Instructional Materials effect on Academic Achievements [r = 0.6897, N=900, P<0.05

The model is however significant at 5% alpha level such that the sig. value is 0.000 hence, the null hypothesis is rejected. It is therefore concluded that there is a significant relationship between the Teachers qualification and students' achievements in senior secondary school mathematics.

DISCUSSION OF FINDINGS

From the analysis of results, the study reveals that there is significant relationship between the teacher's qualification and students' achievements in senior secondary school mathematics. Form the finding above, the hypothesis stating that there is no significant relationship between there is no significant

relationship between teacher's qualification and students' achievements in senior secondary school mathematics is rejected. The result shows a significant relationship and this indicates the alternative hypothesis that, there is strong positive relationship between the teacher's qualification and students' achievements in senior secondary school mathematics. The hypothesis revealed that there is a significant relationship between teachers' qualification and students' Academic Achievement in Mathematics. This implies that teachers' level of education and certification in their expertise area can boost students' Academic Achievement in Mathematics. This finding is in agreement with the finding of Dan and Dominic (2010) and Okpala, (2019). Findings of the studies showed teachers' qualifications and class size were significantly related to students' academic achievement. These findings were used to guide planners about the need for qualified teachers to facilitate effective teaching and learning in secondary schools in Nigeria. This finding shows that teachers' qualification relates to students' Academic Achievement in Mathematics.

RECOMMENDATIONS

Based on the above findings of this study, the researcher made the following recommendations

- The school Authorities, industrialists, parent's Government and private individuals should encourage the employment of teachers with higher qualification in schools.
- Curriculum planners should make the employment of teachers with higher qualification in schools compulsory at all levels of education.
- Government and Ministry of Education should encourage teachers to further their studies for more proficiencies in their career.

SUGGESTION FOR THE FURTHER STUDY

Based on findings and the scope of this study, the researcher recommends further studies to be carried out in the following areas:

- A replica of the study should be carried out within the secondary school context in other local Government areas to compare the results.
- A research study to be carried out in a different geographical region to determine the impact of teacher's qualification to teaching mathematics.

ACKNOWLEDGEMENT

I acknowledged my beloved Wife Mrs. Theresa Wilfred Itankan, my Children, Favour, Juliet, Roselyn and my twins (Joseph and Josephine) for their prayers and support during the course of this research work. Also worthy of mention is my research assistants, my Friend Mr S. S. Dame, Mr Ernest Nkasi and other research crew members and friends too numerous to mention for their untiring effort toward the success of this research work.

Finally I acknowledged our reputable institution Federal Polytechnic, Bali Taraba State for creating the platform for us to access the sponsorship from Tetfund for this research work. God bless all.

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