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# Influence of Mathematics Teachers' Attitude on Academic Achievement of NCE Students in Teaching and Learning Mathematics at Shehu Shagari College of Education Sokoto

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***Abstract:*** *All NCE students formed the population of the study. The methodology used was survey research design. Purposive sampling technique was used to select the sample. The findings indicated that the attitude of mathematics teacher towards teaching and learning of mathematics influenced and encouraged NCE students in learning mathematics. This implies that both male having the average of (70.35) and female (having the average of 71.0) are to some extent having equal positive comment and this shows that both male and female students are having approximately the same perception about the mathematics teachers attitude. The result shows that the male NCE students have higher negative perception than that of female students on teachers' attitude towards teaching and learning mathematics. This means that male students have more negative perception than that of female student about the mathematics teachers. Based on the finding it is therefore recommended that: Mathematics teachers should adopt the positive attitude of mathematics teacher to enable their students understand and emulate their habit in the teaching and learning of mathematics.*

***Key words:*** *Influence: Attitude: Academic Achievement.*



## Introduction

It is well known fact, that mathematics of the present generation is a set of highly sophisticated, intellectual activities (Musa, 2006). According to Agwagah (2001) mathematics teaching and learning should involve games in order to arouse the interest of pupils, game in mathematics will be helpful, to achieve a better performance in mathematics, mathematical power according Donn et al (1997), is the ability to feel comfortable in using mathematics, knowledge to solve real life research report continue in indicate the students performance is worsening as year by (Kurumeh, 2006).

According to Abakpa and Fekumo (2013) state that attitude can alter every aspect of person life, including their career. However, the exact definition of attitudes towards mathematics varies among educators (Akinsola & Olowojaiye, 2008). Ma and Kistor (1997) define attitudes towards mathematics as an aggregate measure of liking or disliking of mathematics, a tendency

to engage in or avoid mathematical activities, a belief that one is good or bad at mathematics, and a belief that mathematics is useful or useless. Attitude towards mathematics is just a positive or negative emotional disposition towards mathematics (Zan & Matino, 2007).

Students attitudes towards mathematics is a major factor that influences students' choice of achievement in the subject (Abakpa and Fekumo, 2013). Based on this, several studies have been conducted in different countries in order to find out the students' attitude towards mathematics (Tahar, Isma'il, Zamani&Adanan, 2010: Tezer&Karasel, 2010: Maat&Zakaria, 2010), students have different attitude towards mathematics. More often, the public regard mathematics as a difficult, cold, abstract, theoretical and ultra rational subject (Ernest, 2004). Mathematics has been one of the subjects which Nigerian students especially at secondary school level develop dislike for and likewise achieved poorly (Odili, 2006) most especially the female student. Girls are negatively influenced by their sex-role stereotypes (Fennema and Sherman, 1977: Sherman, 1982 and Ethington 1992). To Fennema and Sherman, (1977) and Hyde, Fennema, Ryan, Frost & Hopp (1990), mathematics and science are stereotyped as male dominates. Sometimes even teachers tend stereotype mathematics as a male domain. In particular, they overrate boys' ability relative to girls in mathematics (Helwig, Anderson & Tindal, 2001). Stereotypes about female inferiority in mathematics are prominent among students. Males seem to be more inclined to mathematics than females. From observation, at secondary school level most of the girls don't actively participate in mathematics classes due to their poor perceptions about the subject.

Negative attitude towards mathematics in women deprived them from a large number of professions because they see such professions as masculine in nature Oteze (2011) maintained that gender differences may be decreasing, but that the differences still exist in the learning of complex mathematics, personal beliefs in mathematics and career choices that involve mathematics. According to Iji, Abakpa and Fekumo (2013). Several factors are responsible for this negative attitude. Research evidence asserts to this such as that of Kolaowles (1998) and Otto (2000) that parents and families often put pressure on their children as regards the nature of their future occupations.

The quality and quantity of teachers determine how successful students understand and perform in mathematics.

(Uke, 1999) the shortage of qualified teachers, for example, can be seen from the following analysis: in 2006, it was reported Nigeria had a total of 222,238 teachers out of which 97,213(43.7%) were graduates with teaching qualifications, 45,172 (20.3%) were graduates without teaching qualifications, 63,518 s(28.6%) were holders of the Nigerian Certificate in Education (NCE), 10,620(4.8%) were Diploma certificate holders and about 27% of the whole teaching force were grade two, SSCE and other certificate holders (FME), 2006). Since qualified teachers are supposed to teach effectively, it is important to employ and retain them for the purposed of teaching mathematics.

Since mathematics is important, it is important also to have it taught by sufficient number of qualified interested or motivated teachers. The National Policy on Education (FGN, 2004) stated that no education can rise above the quality of its teachers. This means that if the quality of teachers is poor without interest in teaching, the teachers is not well prepared education system will be poor if the education system is poor, it will result in poor quality products and this will affect the development of Nigeria. Similarly, the teaching of mathematics requires qualified teachers that are well experience: if those that are not qualified may engage in practices that may shortchange students like teaching with poorly prepared lesson, avoiding

some topics that may appear difficult for them to teach but are very important for students to learn, making unnecessary computational mistakes that should be avoided and treating students without respect and so on. These affect the performance and interest of students in mathematics. The report of the chief examiner (WAEC, 2009) stated that students have shallow knowledge of mathematics, lack of mathematical/manipulative skills and so on simply because they were exposed to poor teaching.

As discuss, there is no doubt that the issue of qualified teacher in the right quantity among other things is a key element towards effective teaching of mathematics. This is supported by many research findings. Mathematical knowledge (Bergeson, 2002), qualified teachers help students score high marks in mathematics (Bergesnon, 2002) and there is a strong correction between teacher ability/education/experience and students achievement (Greenwald, Hedges & Lane, 1996).These means that the more prepared the teachers are the better they are able to teach effectively. This helps students to improve their performance in mathematics. Implication of the study for national development were discussed and it was recommended among other things that the plateau state Teachers service Commission should employ more qualified teachers to teach mathematics and teachers who are not well qualified to teach should be encouraged to go for further studies to acquire higher qualifications.

One of the causes of poor performance of students in mathematics in the secondary school is poor quality and quantity of teachers (Ingersoll &Perda, 2009). Quality has to do with teachers that have been trained to teach mathematics with Bachelor of Science Education (B.Sc.Ed) or Bachelor of Education (B.Ed.) degrees. The training is done in recognized institutions like Colleges of Educations (C.O.E)Universities and Institutes of Education (IOE) in Nigerian universities.

**Hypotheses**

To achieve the objective of this study, the following null hypotheses have been formulated and tested at 0.05 level of significant.

**$H_{01}$:** There is no significant different between positive and negative responses of the students on the attitudes of mathematics teacher.

**$H_{02}$:** There is no significant different of teachers attitude on male and female students' positive comment toward teaching and learning of mathematics

## Methodology

The methodology of this study is survey research design. Musa (2012) questionnaire for mathematics teachers positive and negative comments was strictly adopted to collect the data. The questionnaire is of two types that is positive and negative comments about mathematics teacher's attitude. The questionnaires consist of **agree, disagree and undecided.** The population of the study is all NCE 1 students of SSCOE Sokoto with 6000 students. Purposive sampling technique was used to select some mathematics combinations as the sample of the study with 500 students. The questionnaires used are as follows:

## MY MATHEMATICS TEACHER QUESTIONNAIRE (PC)

**MALE** **FEMALE**

***Instruction***: Please kindly respond to each of these items by ticking () and be honest

| S/N | Mathematics Teacher:- | Agree | Disagree | Undecided |
|---|---|---|---|---|
| 1. | Always indicates what he/she intends to teach me in mathematics | | | |
| 2. | Is always logical in teaching me mathematics | | | |
| 3. | Is always teaching me the correct approach to solve mathematical problem | | | |
| 4. | Always gets an accurate answer when solving maths in the class | | | |
| 5. | Always interests me when teach mathematics | | | |
| 6. | Always motivate me to learn mathematics | | | |
| 7. | Is always neat | | | |
| 8. | Is always punctual to the class | | | |
| 9. | Always writes legibly and orderly when teaching me mathematics | | | |
| 10. | always uses simple, clear and accurate English when teaching mathematics | | | |
| 11. | Always listen to our complain | | | |
| 12. | Is always frank, objective and unbiased in answering questions in marking test or assignment | | | |
| 13. | Is always calm but cheerful in the class | | | |
| 14. | is always composed and orderly | | | |
| 15. | Always uses teaching aids where necessary | | | |
| 16. | Always has a good relationship students | | | |
| 17. | Always covered good number to topic within a term or session | | | |
| 18. | Always makes sure that everybody in the class understands what he/she is teaching | | | |
| 19. | Always correct and returns assignment in good tine | | | |
| 20. | Always ensure that what he/she taught appear in examination | | | |

**MY MATHEMATICS TEACHER QUESTIONNAIRE (NC)**

**MALE** **FEMALE**

***Instruction***: Please kindly respond to each of these items by ticking () and be honest

| S/N | Mathematics Teacher:- | Agree | Disagree | Undecided |
|---|---|---|---|---|
| 1. | My mathematics teacher is always late to class | | | |
| 2. | My mathematics teacher is always not organized | | | |
| 3. | My mathematics teacher is always unhappy in the class | | | |
| 4. | My mathematics teacher always make mistakes when solving mathematics problem | | | |
| 5. | My mathematics teacher is always dirty | | | |
| 6. | My mathematics teacher always look like a crazy man/woman | | | |
| 7. | My mathematics teacher is always looks confused | | | |
| 8. | My mathematics teacher is always having bad handwriting difficult to read | | | |
| 9. | My mathematics teacher always teaches maths using poor English | | | |
| 10. | My mathematics teacher tells lies to the class | | | |
| 11. | My mathematics teacher does not listen to students complain | | | |
| 12. | My mathematics teacher does not listen to students complains | | | |
| 13. | My mathematics teacher does not correct assignment in good time | | | |
| 14. | My mathematics teacher is always based in the class | | | |
| 15. | My mathematics teacher is always friendly with girls than boys | | | |
| 16. | My mathematics teacher his/her teaching is not interesting to me | | | |
| 17. | My mathematics teacher cannot control the class | | | |
| 18. | My mathematics teacher is difficult person | | | |
| 19. | My mathematics teacher looks like an insane man/woman | | | |
| 20. | My mathematics teacher is anti-social | | | |

Musa (2012)

**Hypotheses Testing**

**Hypothesis**: there is no significant difference on teachers between positive and negative response of the students on the attitudes of mathematics.

Table : Positive and negative responses students on the attitudes of mathematics teacher towards the teaching and learning.

| Response | N | Mean | Std. deviation | Df | T | p-value |
|---|---|---|---|---|---|---|
| **Positive** | 45 | 70.67 | 11.807 | 90 | 8.816 | 0.001 |
| **Negative** | 47 | 48.64 | 12.15 | | | |

$\alpha = 0.05$level of significant

Source: Filed work and own computation using SPSS 16.0

From the table above, the students responses, positive and negative are displayed along with their number of observation (N), mean, std deviation, degree of freedom (df), t- calculation and p-value. At 0.05 level of significance, the significant difference between positive representing the average and negative response of the students on the attitudes of mathematics with t(90) = 8.816, p=0.001, hence, the hypothesis is rejected.

Therefore, the result above show that students gave positive responses comment on the attitude of mathematics teacher towards the teaching and learning of mathematics more than the negative response/comments. Hence, the attitude of mathematics teacher towards teaching and learning of mathematics motivated and encouraged the student in learning of mathematics.

***Hypothesis***: There is no significant difference teacher attitudes on male and female student's positive comment towards teaching and learning mathematics

***Table 2***: Teacher attitudes on male and female students positive comments towards teaching and learning mathematics

| Gender | N | Mean | Std. deviation | Df | T | p-value |
|---|---|---|---|---|---|---|
| Male | 23 | 70.3 | 10.178 | 43 | 0.183 | 0.856 |
| Female | 22 | 71 | 13.540 | | | |

Table 2 above display the gender (male and female) of students along with their number of observation (N) mean, std deviation, degree of freeson (df), t-calculate and p-value at 0.05 level of significance of the result indicate that there is no significant difference of teachers attitude on male and female students, positive comment towards teaching and learning mathematics with t (43) = 0.383, p=0.856, hence the hypothesis is accepted.

Now the above result implies that both male having the average of (70.35) and female (having the average of 71.0) are to some extent having equal positive comment on those shows that both male and female students are having same perception about the mathematics teacher.

**Hypothesis**: There is no significant difference of teacher attitude on male and female students negative comments towards teaching and learning.

Table 3: Teachers attitudes on male and female students negative comment toward teaching and learning mathematics.

| Gender | N | Mean | Std. deviation | Df | T | p-value |
|---|---|---|---|---|---|---|
| Male | 23 | 52.88 | 14.429 | 45 | 2.59 | 0.013 |
| Female | 23 | 44.22 | 7.122 | | | |

From the table 3 above, the students gender (male and female are displayed along with their number of observation (N), Mean, std, deviation degree of freedom (df), t-calculated and p-value at 0.05 level of significance, the results shows that there is significant differences of teacher attitudes having the average of 52.88 on male and the female having 44.22 students negative comments towards teaching and learning mathematics with $t(45)=2.59$, $p=0.013$, hence the hypothesis is rejected.

Now, the result suggests that the male student have higher negative comment than that of female students on teachers attitude towards teaching and learning mathematics. This means that male student have more negative perception than that of female student about the mathematics teachers.

**Conclusion**

Haven seen the literature about students and teachers perception on the teaching and learning of mathematics, it has clear that teachers attitude is very vital in the teaching and learning of mathematics. We have also seen that in the studyall NCE students formed the population of the study. The methodology used was survey. Purposive sampling technique was also used the findings indicated that the attitude of mathematics teacher towards teaching and learning of mathematics motivated and encouraged the student in learning of mathematics. implies that both male having the average of (70.35) and female (having the average of 71.0) are to some extent having equal positive comment on those shows that both male and female students are having same perception about the mathematics teacher. the result suggests that the male student have higher negative comment than that of female students on teachers attitude towards teaching and learning mathematics. This means that male student have more negative perception than that of female student about the mathematics teachers.

**Recommendations**

In this study it has been recommended that:

- Mathematics teachers should adopt the positive attitude of mathematics teacher to enable their students understand and emulate their habit in the teaching and learning of mathematics.
- Curriculum planners been the focal point of formulation and development of curriculumshould also in cooperate the attitude positive attitude of mathematics teacher to enable the teachers improve their the teaching and the learning of mathematics in their various schools of learning.
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## References

Agwagha, U.N.V (2001). Mathematics Games for primary school. Nsukka: Mike social press.

Akinsola, M.K &Olowojaiye, F.B (2008) Teacher instructional Methods and students Attitude towards mathematics. International Electronic Journal of mathematics education.

Ernest P. (2004) Image of mathematics Values and Gender. In S. Johnston Wilder and B. Allen (Eds) mathematics education: exploring the culture of learning. Rutledge.

Fennema E. & Sherman J. (1977) sex related differences in Mathematics Achievement, Spatial Visualization and Affective Factors America Educational Research Journal. 14, 51-71

Hyde, J. S Fennema, E Ryan M Frost, L. A. &Hopp, C (1990). Gender Comparisons of Mathematics Attitudes and Affect: a meta analysis Psychology of Women Quarterly.

Iji, C.O Abalka, B.O and Fekumo, B (2013). Factors that will enhance Senior secondary school Female Students Attitude Towards mathematics: A step toward Mathematical Development in Sadiku J.S proceedings of September 2013 Annual National conference of Mathematical Association of Nigeria. Olad Nigeria Enterprises.

Isah A. (2015) Impact of cooperative learning strategy in performance and retention in geometry construction among Junior secondary school Student in Sokoto State. Nigeria Un published thesis. AHmadu Bello University Nigeria. Faculty of education.

Isah, A (2015) is there best method of teaching Mathematics? In Salawu A.A Sokoto international Journal of counseling Psychology. Faculty of education and extension services, UsmanuDnfodiyo University Sokoto, Nigeria pp (178-190). Vol. 3

Isah, A. (2015). Effect of Cooperative learning stagy on performance Among full time and part time NCE III Students Sokoto. At 2nd Annual Conference of the Mathematics Association of Nigeria 31st August 5th September 2015

Ma, X &Kishor, N (1997).Assesing the Relationship between Attitude toward mathematics and Achievement in Mathematics Eduction, 28(1), 26-47

Musa M. (2006). The Pivot of science and technology for sustainable faculty of eduction Ahmadu Bello University, Zaria 1(1): 95 -100.

Musa M. *et al* (2012). The best Practices of Teaching and Learning of Mathematics among secondary school students. 31st annual conference. Programme of events and book of abstracts. Ahmadu Bello Bello University Zaria.

Odili, G.A (2006) Mathematics in Nigeria secondary schools. A Teaching Perspective Port-Harcourt Rex Charles and Patrick EUT Ltd.