Attitude of Primary Education Studies Students towards Learning Mathematics in Niger State College of Education Minna

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Abstract
The study was to investigate attitudes of primary education studies students towards learning mathematics in Niger state College of Education, Minna. Two research questions and hypothesis were employed to guide the study. The research design was descriptive survey. The target population consisted of 200 level students in undergraduate and Nigeria Certificate of Education in the department of Primary Education Studies (PES), with sample size of 60 students selected through simple random sampling. The instrument utilized for data collection was questionnaire titled Attitude towards Mathematics (ATMQ). The instrument was validated by three experts from PES and Mathematics departments. To ensure reliability, a test-retest analysis using Pearson Product Moment Correlation (PPMC) was used and yielded at r=0.7. Mean and bench mark were used to answer the research questions, while t-test analysis was used in testing the hypothesis. The findings revealed that the attitude of PES students was positive and can influence their academic performance. It was revealed that gender doesn't influences their attitude in mathematics if they are equally treated and right believe about mathematics. It was recommended among others that students should be made aware that it is their attitudes toward mathematics learning that can leads them success in mathematics. Stakeholders should try to cultivate positive attitude on students by exposing them to relevance of mathematics.
Keywords: Primary, Education, Students, Attitude, Mathematics

Introduction

It is factual that primary education is the key to the success or failure of the whole education system, as being the foundation of all levels of education system. In fact, it is the embryo from which the development of the later intellectual disciplines must build up. The recognition of the importance of this level of education has prompted the Federal Government of Nigeria to continue making untiring efforts to ensure that education received at the foundation level is qualitative (Saddiq, 2020).Whatever efforts that are being made, no matter how strong they are, can only be crowned with success if primary school teachers are of high quality. In this regard, the establishment of primary education studies department has been made compulsory by the National University Commission (N.U.C.) and National Commission for College of Education (NCCE) to specifically train undergraduate and Nigeria Certificate of Education (N.C.E) teachers for Primary Schools.

According to NCCE (2020) philosophy run thus; the primary school is the foundation level of the education system in Nigeria, hence primary education studies (PES) aims at equipping teachers with relevant knowledge and skills to enable them teach effectively all subject in the basic education 1-9 as contained in National Policy on Education. Based on this philosophy, primary school teachers should be competent to teach all primary school subjects effectively. This also demands that primary education studies syllabus should be reviewed from time to time and also to give adequate preparation for pre-service teacher trainees in PES department particularly. Furthermore, the courses are developed for pre-service teachers of the department in both N.C.E and Undergraduate who have poor background in mathematics, with intention to refresh and strength of the pre-service teachers' knowledge of ordinary level mathematics. The National University Commission (N.U.C.) and National Commission for College of Education (NCCE)

has been playing active role to revise primary education studies curriculum in which mathematics- oriented courses are well addressed in N.C.E and Undergraduate programs of primary education studies (PES) at each level of the program. Since teachers' content knowledge plays a vital role in the development of mathematical knowledge for effective teaching. A more knowledgeable teacher is more likely to present mathematics tasks in familiar context and connect tasks to students' previous knowledge. Mathematics is a course that occupies a central position in the PES program and has eaten deep into both the minds of students in both N.C.E and undergraduate program which have invariably influenced their academic achievement.

Ahmad and Babawachiko (2021) identified some factors that can influence mathematics performance, including phobia, mathematics anxiety, self-efficacy; negative self-concept, motivation and attitude. Research reports have showed that poor performance in mathematics is a function of cross – factors related to students, teachers and schools. Among the students' factors, attitude is regarded by many researchers as a key contributor to higher or lower performance in mathematics (Inekwe, 2019;Omokaro & Nwanun, 2020;Ahmad & Alhassan). In light of these considerations, the present researchers have to address students' attitude and gender for this study. This may be barrier of effective learning of mathematics and problem-solving, which may in turn cause high rates of failure in the subject.

Attitude is an affective factor which invariably affects the cognitive domain of learning as pointed out by (Inekwe, 2019). Attitude refers to a learned tendency of a person to respond positively or negatively towards object, situation, concept or another person (Mzomwe, et al., 2019). It is a central feature of human identity, and is also an affective domain that is either an inhibition or an enhancement to teaching and learning. Everyday human being love, hate, like, dislike, favor, un-favor, agree, disagree, argue, persuade, and so on. All these are evaluative reactions to an object; hence attitudes can be defined as a summary evaluation of an object of thought (Omokaro& Nwanun, 2020). They are tendencies and predisposition that guide an individual's behavior and persuade to an action that can be evaluated as either positive or negative. It is the way you think or feel about something or somebody. That is, attitudes are products of related beliefs and values. It is like a system of ideas which individuals are not born with but they learnt afterwards.

They further observed that attitudes are influenced by three aspects: cognitive (beliefs, thoughts, attributes), affective (feelings, emotions), and behavioral information (past events, experiences). Therefore, attitude of individual student towards mathematics could be view as the emotions that one correlates with mathematics or the belief about mathematics or behaviors towards mathematics which could either positive or negative. Research reports shows abound on how attitude contributes to the variance of students' academic achievement in mathematics. Ahmad and Alhassan (2024) described that high achievers have more positive attitude towards mathematics than low achievers. They commented that students with the same level of intellectual capability differ in their performance as a function of their attitudes. Findings by Chika, et al., (2021) revealed that attitude of students is fundamental towards good performance in any subject especially mathematics. They pointed out that teacher's attitude towards mathematics influence students' performance in mathematics. A research finding by Jerald, et al., (2020) considered the variables as attitude which is mental and natural state of readiness, originated from experience exerting a directive influence upon the individual's response to all the objects and situation with which it is related. Attitude is of two kinds positive or negative. A positive attitude towards mathematics results a positive emotional disposition in relation to the subject. While a negative attitude towards mathematics correlated to a negative emotional disposition. Attitude is positively related to academic achievement in any human endeavor. For instance, attitude is fundamental to the dynamics of behavior and determines how far a student learns (Ahmad & Alhassan, 2024). Attitude has to do with the way one perceives, the opinion one holds as well as what one belief

about a thing, people, activities, policies and phenomena in general. In learning mathematics, attitude serve as a major factor because their thinking or behavior towards mathematics it will determine the levels of their diligence and achievement, as reported by (Inekwe, 2019). Attitude of students exerts great influence on their achievement in mathematics as reported by (Omokaro & Nwanun,2020 Nwuke & Anaekwe, 2023). It is assumed that the attitudes of these students in the department towards learning mathematics will be different. Attitude which is an expression of likeness or dislikeness plays significant role in teach all subjects, particularly mathematics. In a general outlook education is a major instrument through human resources development is achieved without gender disparity (Chika, el at., 2021).

Gender is defined as the biological, social and cultural construct that differentiate the roles, behavior, mental and emotional characteristic between male and female developed by the society. Some research findings concerning gender attitudes towards teaching and learning of mathematics are inconclusive. Khalid, et al., (2021) reported that there is no significant difference in the attitude of female and male teachers towards mathematics. But Ahmad and Alhassan (2024)found significant difference in favor of female gender, while Mzomwe, et al., (2019) on the other end found significant difference in favor of the male gender. In view of these literatures, this present study wants to investigate the attitude of primary education studies students toward learning mathematics.

Statement of the Problem

Despite the importance of mathematics in PES department at both NCE and undergraduate programs, students' poor performance in the mathematics course in semester examinations in quite disturbing and leaves much to be desired. Primary Education Studies (PES) students' performances in the semester examination conducted by Directorate of Academic Planning & Development, Niger State College of Education continue to deteriorate over years. For example, 2021 only 29.3% and 17.5% of those who sat for the PES 213 and PES 223 semester examinations respectively had a pass and above in N.C.E Category.

Furthermore, in 2021 only 15.6 % and 13 % of who sat for the PED 105 and PED 204 semester examinations respectively had a pass and above in undergraduate category. The poor performance in mathematics courses is attributed to many factors such as interest, attitudes, instructional methods, mathematics anxiety and gender. To the best of the researchers' knowledge, no study has tried out the influence of attitude of primary education studies students towards learning mathematics. To fill this gap, this study intended to investigate attitude of primary education studies students towards learning mathematics

Aims and Objectives of the study

The main purpose of this study is to investigate the attitude of primary education studies students towards learning mathematics in Niger State Collage of Education, Minna. Specifically, the objectives are to.

i. Examine the attitude of primary education studies students' attitude towards mathematics.
ii. Determine the attitude of gender of primary education studies students towards mathematics.

Research Questions

i. What is the attitude of primary education studies students towards learning mathematics?
ii. What is the attitude of gender of primary education studies students towards learning mathematics?

Research Hypothesis

Ho_1: there is no significant difference in the mean attitude score of female and male primary education studies students towards learning mathematics.

Methodology

The study adopted descriptive survey research design in order to describe and explain conditions surrounding the present study. The study was carried out in Niger State College of Education Minna. The choice of the college was made because of three major trends in

mathematics teacher education negatively affect pre-service teachers' understanding of how to effectively teach mathematics. The tensions are: i) pre-service teachers' lack of subject matter understanding, ii) the duration of pedagogical course and iii) attitude of learners and teachers.

The target population of the study comprised undergraduate and N.C.E 200 level Students of primary education studies (PES) Department numbering 174(Undergraduate, 57, N.C.E. 117). The rationale for choosing the 200 level students was that they were a year and some months into their training programs and that they have covered most of the mathematics courses. Other levels were exempted because some were few months into teaching training, while others are out of college for teaching practice (TP). A sample of 60 primary education studies students was selected using simple random sampling technique through balloting. Thirty (30) students from each of the programs and are made up of 30 males and 30 females. The instrument for data collection was questionnaire title Attitude Toward Mathematics Questionnaire (ATMQ) adapted and modified from Chika etc (2021) structured to address research questions and null hypothesis. The questionnaire consisted 20items with likert 4 point scales of strongly Agree (SA), Agree (A), Disagree (D) and strongly Disagree (SD) respectively. To check the face and content validity the instrument was given to two experts from primary education studies and mathematics department respectively for their observations and suggestions. The comments and suggestions were added and considered for final draft. The instrument was subjected to reliability analysis using test-retest with value as r= 0.7. Descriptive Statistics; Mean & Standard deviation were used to answer the research question. Decisions were made when mean is greater than or equal to 2.5 as acceptance, while mean less than 2.5 as rejection. The t-test analysis for null hypothesis.

Results

Research Question One

What is the attitude of primary education studies students towards learning mathematics? The Table 1 below provide answer to the research question asked.

Table 1 *Means and Standard Deviations on Students' Attitude towards Mathematics*

S/NO	Statement	Mean	Decisions
1	I enjoy studying mathematics	3.2	Accepted
2	I am afraid whenever it is mathematics	2.6	Accepted
3	I quickly learn mathematics	2.0	Rejected
4	I do not hide my problem in mathematics	3.1	Accepted
5	I love learning mathematics with my peers	2.5	Accepted
6	I believe mathematics will be better if is taught employing real life situation	3.0	Accepted
7	My scores are always low in mathematics	2.3	Rejected
8	I would like to continue studying mathematics	3.1	Accepted
9	I look forward to mathematics classes	3.1	Accepted
10	I am helpful to others in mathematics	2.6	Accepted

Source: Field Survey 2024

The results obtained in Table 1 from the attitude survey of primary education studies students revealed that students' attitude was positive and it can also likely influences their academic performance in mathematics. Since most mean scores responses are greater than or equal to bench mark ie ($X \geq 2.5$). The higher mean score recorded 3.2 which read that 'I enjoy studying mathematics', while lower mean score showed 2.0 which reads "I quickly learn mathematics".

Research Two: What is the attitude of gender of primary education studies students towards learning mathematics? The Table 2 below provides answer to the research question asked.

Table 2*Means and Standard Deviations on Influence of Gender on Students' Attitude towards Mathematics*

S/NO	Statement	Mean	Decision
11	Being a male or female affects my learning of mathematics	1.7	Rejected
12	Female love mathematics more than males	2.6	Accepted
13	It is abnormal for a female to study mathematics in tertiary institution	1.8	Rejected
14	Male found mathematics more interesting than females	2.3	Rejected
15	Female students are not serious in learning mathematics	1.5	Rejected
16	Female students hardly attend mathematics class	1.5	Rejected
17	Female students are more active in class	3.1	Accepted
18	Both male and female students perform well in mathematics	3.2	Accepted
19	Male students have poor attitude towards mathematics	2.0	Rejected
20	Males students have higher scores concept when it comes to mathematics than females	2.0	Rejected

Source: Field Survey 2024

The results recorded in Table 2 from the attitude survey of primary education studies students showed that gender doesn't influences their attitude in mathematics if they are equally treated and right believe about mathematics. Since majority of mean scores indicated rejections of items.

Research Hypothesis

Ho_1: there is no significant difference in the mean attitude score of female and male primary education studies students towards learning mathematics. The null hypothesis was tested using t-test analysis at the 0.05 alpha level of significant. The result is presented in Table 3:

Table 3*t-test Analysis of Male and Female Students in ATMQ*

Variable	N	Mean	S.D	DF	T-cal	P-value	Remark
Males	30	2.74	0.81				
				58	2.48	.070	Sign
Females	30	2.51	0.95				

The result recorded in Table 3 proved that gender doesn't influences students' attitude in mathematics if equality and right belief are maintained. Since the p-value is greater than alpha then the stated null hypothesis is retained.

Discussion of Findings

The result of this study revealed the students' attitudes was positive and can likely influence their performance in mathematics as pointed out by Inekwe (2019) thatattitude is an affective factor which invariably affects the cognitive domain of learning. This confirmed the findings of Chika, el at., (2021) and Ahmad and Alhassan(2024) that there is a positive correlation between student's attitude towards mathematics and their academic performance. The authors found that high achievers have more positive attitude towards mathematics than lower achievers. This finding is in line with other similar studies (Omokaro & Nwanunu, 2020; Ahmad & Alhassan,2024).

The result in this study also showed that gender doesn't influence students' attitude towards mathematics. It is correct to submit that been male or female, doesn't have nothing to with your attitude toward mathematics. This finding is in agreement with findings of Khalid, et al., (2021) that there is no significant difference in the attitude of female and male students towards mathematics. But this disagrees with research report of Ahmad and Alhassan (2024) who found significant differences in favor of female folk. To Mzomwer (2019) on the other hand found significant difference in favor of the male gender.

Conclusion

Based on the results of this study, it can be concluded that attitude influences the performance of primary education studiesstudents in mathematics. In addition, gender as a variable does not influences students' attitude towards mathematics. This implies that mathematics lecturers should assist their students to develop positive attitude towards mathematics, so as to improve their academic performance in mathematics. Since attitude is an affective factor which invariably affects the cognitive domain of learning.

Recommendations

Based on the findings of this study, the following recommendations were made:

i. Students should be made aware that it is their attitude toward mathematics learning that can leads to their academic performance in mathematics as whether success or fail.
ii. Stakeholders in the educational industry should try to cultivate positive attitude on students by exposing them to reality and relevance of mathematics in our daily life and nation at large.
iii. National University Commission and National Commission for College of Education that have the mandated on curriculum development should articulate the usefulness and applicability of mathematics courses in PES program, so that students overcome the phobia and to work hard to improve in the teaching and learning of mathematics.
iv. Lecturers should not only be concerned about the academic performance of their students but should go ahead to other welfare need to be use for their students. Such concerns can assist to build strong confidence, which student can conquer fear and thus attract him/her to the lecturer and his subject t(mathematics).

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