AN INVESTIGATION INTO FACTORS THAT INFLUENCING ATTITUDE OF SECONDARY SCHOOL STUDINTS TOWARDS THE STUDY OF MATHEMATICS IN ILORIN WEST LOCAL GOVERNMENT, KWARA STATE

BY

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MATRIC NO: KWCOED/IL/22/0648

A PROJECT SUBMITTED TO THE DEPARTMENT OF MATHEMATICS / PHYSICS, SCHOOL OF SCIENCE, KWARA STATE COLLEGE OF EDUCATION ILORIN IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF NIGERIA CERTIFICATE IN EDUCATION (NCE)

JULY, 2025

CERTIFICATION

This is to certify that this research work was carried out by Oladejo Samuel Feranmi with Matric Number: KWCOED/IL/22/0648 of the Kwara State College of Education Ilorin, Nigeria

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DEDICATION

This project is dedicated to Almighty God the most beneficent, merciful and the most high for sparing my life throughout the period of my programme.

ACKNOWLEDGEMENT

First and foremost, I give all glory and thanks to Almighty God for His grace, wisdom, and strength that have carried me through every stage of this project. Without His guidance and blessings, this work would not have been possible.

I sincerely appreciate my project supervisor, Dr. Ibrahim I, for his patience, encouragement, and valuable guidance throughout this journey and my Head of Departmen in person of Mr. Kola Saka Isiaka.

My heartfelt thanks go to my loving parents, Mr. and Mrs. Oladejo, for their endless love, prayers, and unwavering support.

Finally, I'm grateful to my wonderful siblings, Taiwo and Kehinde, for always motivating me and making the journey lighter with their encouragement and my course mate to mention few of them Ogunbiyi Solomon, Folorunsho Moses, Saliu Jamiu, Saheed Gazali, and Sulyman Abdulqodir thank you all.

ABSTRACT

This project topic is based on an investigation into factors that influence students choice of integrated science subjects among college of education students, which focus mainly on (Kwara State College of Education Ilorin)This study is designed to have a critical look into some of the factors that might influence the choice of students in integrated science subject in Kwara State College of Education Ilorin, It also meant to make students develop more interest in integrated science as a subject by exposing them to some advantages or merits that might be derived from integrated science subjects as a field to study.

The study was a descriptive research which presents information on research design, The research population was one hundred and twenty (120) respondents representing one hundred percent of the total respondents. The researcher also stated that the data collected with the aid of questionnaire was presented in a tabular form. The sample and sampling techniques method was done randomly in Kwara State college of Education Ilorin, research data gathering instrument method of data presentation and method of data analysis. The study reveals that the major factors influencing students choice of integrated science subjects include: personal interest, career prospect, teacher influence and availability of resources. These factor significantly impacted student's decision in choosing integrated science subject as a course of study.

Based on the findings, the following recommendations were made that students should be allowed to choose the course of their choice right from secondary school level and also parent should stop forcing children to study certain courses they do not desired to study in school.

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CHAPTER ONE

INTRODUCTION

Background of the Study

There is no disagreement on the vital importance of mathematics to both the scientist, the technologist and even to every layman in his everyday life (Omenka, 2013). Mathematics is the key element and activity in the day to day living that every human being practices in one form or the other (Kurumeh, Akure, and Oguche, 2017). The knowledge of mathematics is an essential tool in our society (Baroody, 2017). It is a tool that can be used in our daily life to overcome the difficulties faced (Bishop, 1996). Due to this, mathematics has been considered as one of the most important core subject in a school curriculum. More mathematics lessons are likely to be taught in schools and colleges throughout the world than any other subject (Orton, Orton, & Frobisher, 2024).

The Nigerian education accorded mathematics a special position in the school curriculum. In fact, it made a core-subject for both Arts and Science students. All the junior secondary schools students have to pass it at the junior secondary school certificate examination before they are allowed to register for senior secondary school examination. In other words mathematics is one of the core-subjects both at the junior and senior

secondary school levels. It is also required that a student gets a credit pass in it to get admission for science related courses in the universities Kishor, 2017).

The standard tests and evaluations reveal that students do not perform to the expected level. The student under achievement in mathematics is not just a concern for particular countries, but has become a global concern over the years (Pisa, 2018). The relevance of mathematics and the efforts made by the government to improve the student's achievement in mathematics, the result is not yet satisfactory. The West African Examination Council,WAEC (2024) Chief Examiner's Report shows that 1,090,503 candidates sat for external out of which only 10.5% passed. In 2021 out of 1464,301 candidates that sat for external only 15.2% passed mathematics. In 2017, out of 1,484,611 candidates, only 18.5% passed mathematics. National Examination Council, NECO (2006) reported that many of the candidates exhibited lack of knowledge of basic principles needed to tackle some of the mathematics problems.

Several studies and researches have been done in many countries to find the factors that influence the student's performance in mathematics. Among these factors, student's attitude towards mathematics is one important factor that has been consistently studied. Often, the studies on relationship between student's attitude and the student's academic

performance show a positive relationship (Mohd, Mahmood, & Ismail, 2011; Bramlett & Herron, 2019; Nicolaidou & Philippou, 2018; Papanastasiou, 2020; Ma & Kishor, 2017). Hence students' attitude towards mathematics is a major factor that might influence the performance of the students. Due to this, several studies have been conducted in different countries in order to find out the students attitude towards mathematics (Tahar, Ismail, Zamani & Adnan, 2022; Tezer & Karasel, 2022; Maat & Zakaria, 2022; Bramlett & Herron, 2019; Köğce, Yıldız, Aydın, & Altındağ, 2019; Tapia & Marsh, 2024; Fennema & Sherman, 2016) and hence to use these data to suggest the low performance of students and factors affecting it. The aim of this research is to find out the factors influencing the attitude of secondary school students towards mathematics in some schools in Katsina-Ala, Kwara State. The research focuses on finding the students' attitude towards mathematics and also finding the significant difference between student'sattitudes towards mathematics with regard to the gender of the students.

Statement of the Problem

The rate of failure in both internal and external examinations in Mathematics these days is quite alarming. The failure rate deteriorates from year to year (WAEC, 2021).

The student's attitude towards an academics subject is a crucial factor in learning and achievement in that subject. Whether a student views himself or herself as a strong or weak person in a specific subject may be an important factor in his or her academic achievement. Papanastasiou (2022) showed that there is a positive relation between Mathematics and mathematics achievement. According to Schreiber (2022), those who have positive attitudes towards Mathematics have a better performance in the subject. In Kenya, studies done by Auma (2024) and Achieng (2017) looked at the relationship between teacher factors and student Mathematics achievement as factors affecting Mathematics performance but did not consider students attitude. However, thestudy focuses on the factors influencing student's attitude towards Mathematics with specific reference to objectives, content, methods and evaluation of the Mathematics curriculum and establishes their influence on Mathematics performance.

Purpose of Study

The subject is more positive. The researcher feels that a students' negative attitude toward Mathematics as a subject has a damaging effect on their performance in the classroom. The researcher also feels that teachers who are more enthusiastic and have a more positive attitude about teaching mathematics have students whose attitude about the subject is more positive.

The main purpose of this study is to investigate the factors influencing the attitude of students towards the study of mathematics in Nigeria, using Ilorin West L.G.A, Kwara State as a case study.

Therefore the Specific objectives of the study are:

1. To determine student's performance in Mathematics across gender.

2. To establish student's attitude towards Mathematics across gender, with reference to:

i. Objectives

ii. Content

iii. Methods

iv. Evaluation

3. Determine the level of relationship between attitudes towards Mathematics and performance in Mathematics.

Significance of the Study

The findings of this research upon completion will help students to understand how their attitude towards mathematics can affect their performance in the subject and how their interaction with the society can influence their attitude and hence, their performance in mathematics. And

also, to determine the extent to which the teacher's attitude towards teaching the subject can affect the students' performance in Mathematics.

Research Questions

- What effect does the student's attitude towards mathematics have on their performance in the subject?
- How does gender affects the performance of the students in mathematics?

Research Hypotheses

H_o: There is no significance difference in the performance of students as regards their attitude towards mathematics.

H_o: There is no significance difference in the attitude of students towards mathematics as regards gender.

Scope of the Study

The study was investigated in five schools in Ilorin West L.G.A of Kwara State, Nigeria. It consists of both junior and senior secondary students of these selected schools.

Definition of Terms

Attitude: A student's feelings, beliefs, and disposition towards mathematics, which can influence their motivation, interest, and performance in the subject.

Mathematics: A branch of science that deals with numbers, quantities, and shapes, and involves logical reasoning and problem-solving skills.

Factors Influencing Attitude: Variables that affect students' attitudes towards mathematics, such as teacher characteristics, teaching methods, parental influence, peer influence, and students' self-perception.

Student Attitude towards Mathematics: A student's positive or negative feelings, beliefs, and disposition towards mathematics, which can impact their engagement, motivation, and performance in the subject.

Teacher Characteristics: Teacher's qualifications, experience, teaching style, and attitude towards mathematics.

Teaching Methods: Approaches and strategies used by teachers to deliver mathematics lessons, such as traditional lectures, problem-solving activities, or technology-based learning.

Parental Influence: Parents' attitudes, expectations, and support for their children's mathematics education.

Peer Influence: The impact of friends and classmates on a student's attitude towards mathematics.

Student Self-Perception: A student's confidence, self-efficacy, and perceived ability in mathematics.

CHAPTER TWO

LITERATURE REVIEW

Introduction

William James once said, “It is our attitude at the beginning of a difficult task which, more than anything else, will affect its successful outcome.” (Van Wagner, 2008). This idea crosses many different aspects of everyday life. Businesses bring in motivational speakers to help inspire their employees to help them have a more positive attitude to help productivity. Businesses also do team building exercises to help employees have a better outlook on their jobs and the people they work with. Athletic coaches spend a significant amount of practice time talking to their players about “believing” and reminding players that any team can beat any other team on any given day. If a team does not have a positive outlook on an upcoming game, their chances of winning the game are significantly lowered. Many athletic teams use the phrase “believeand you can achieve” as their motto for a successful season. This idea is well known and accepted in today’s society. This philosophy is no different in classrooms than it is anywhere else in society. McCleod (2022) said that attitude toward mathematics is related to mathematics success in the classroom.

Theoretical Frame Work

Psychologists define ‘attitude’ as any strong belief or feeling or any approval or disapproval toward people and situations. We have favorable or unfavorable attitudes towards people, politics, academic subjects, etc. We favor the things we think are good and helpful, and oppose the things we think are bad and harmful (Kagan, 2014). The students’ attitude towards an academic subject is a crucial factor in learning and achievement in that subject. Whether a student views herself or himself as a strong or weak person in a specific subject may be an important factor in her or his academic achievement. Stodalsky et al. (2021) mentioned that students develop ideas, feelings and attitudes about school subjects over time and from a variety of sources.

Conversely, student’s achievement can influence a student’s attitude as well. Thus, it is important for teachers to improve student work to make a positive change in their attitude toward mathematics (Ma & Xu, 2024). Hannula stated that attitudes can change in a short period of time, and sometimes dramatically (2022). Many students, especially those that are younger and less established students, their attitude toward a particular subject is proportional to their recent success in the class. A good day can change the attitude to the positive side and conversely a bad day can swing the attitude toward the negative side. Although, in Hannula’s research, he

found that once established, an attitude is fairly stable and only minor changes occur based on successes and failures (2022). This is where teachers can have a great impact on the shaping of this attitude: “Teachers can reinforce the idea that mathematics is an interesting subject, used in other disciplines, and is an admission ticket for colleges and careers.” (Anderson,2017).

Significance of Hammouri’s Study

From Hammouri’s study of attitudinal and motivational variables and their relation to mathematics success he was able to draw conclusions similar to those of previous studies. He used the Third International Mathematics and Science Study (TIMSS) to look at 8th graders in Jordan. Jordanians have had shown poor performance in the area of mathematics. He states:“Attitude itself can affect level of energy input, perseverance (Carroll,2022), time on tasks (Love & McVevey, 2001), standard of achievement(Webster & Fisher, 2020) and engagement in an activity (Middleton &Toluk, 1999)”. (Hammouri, 2024) From this, one could say that the better a student’s attitude toward mathematics may be the more successful and the higher the performance level will be for that student. From the study, Hammouri (2024) found significant positive effects of:

1. Attitude towards math on math's achievement and self-perception of math's importance

2. Confidence in math's ability on math's achievement, attitude towards math, educational aspiration and self-perception of math's importance

3. Educational aspiration on math's achievement and attitude towards math's

4. Self-perception of math's importance on math's achievement.

Cheung (2018) wrote about the attitude toward mathematics and the ages of 11-13 year olds. He states that these ages are particularly important in the development of a mathematical attitude. This is the time when negative attitudes become most noticeable. Although he goes to say that the reason behind this is unclear. Possible reasons behind this are the greater prevalence of abstractions in mathematics material. In his research, using a Pearson correlation, he found a positive correlation between attitude and mathematics achievement. The correlation showed that the more positive the attitude, the higher the level of achievement was in the student.

Hannula (2022) looked at the attitude in cognitive-emotional terms. In his research, he states "While a student is engaged in a mathematical activity, there is a continuous unconscious evaluation of the situation with respect to personal goals." When students are evaluated, there are four

areas to examine. The first is simply situational and no prior experience of the entity being evaluated (Hannula, 2022). The second depends entirely on previous experience and is the kind that is typically seen on questionnaires. The third evaluation is when the situation is familiar to a degree, but the individual has no personal experience. The fourth is when an individual looks at ones whole life and the value of different goals in it. Hannula stated that “these four evaluations produce attitude” (2022). Ma and Kishor (2017) looked at the relationship between attitude and performance as three separate components. The first component they looked at was the relationship between performance and self-concept. The second component is the perception between family support and performance. The third component is the perception that mathematics is a male domain and how that affects performance. Ma and Kishor (2017) determined that self-concept was one of the most critical factors in academic success. These researchers further discovered that the relationship between achievement and self-concept is also content specific. When students succeed in areas such as problem solving,it produces a stronger faith in one’s ability and leads to a more positive self-concept which in turn leads to higher levels of achievement. Reynolds and Walberg (2022) looked at middle school students and how achievement and attitude are related and also what determines the student’s attitude.

These researchers looked at the relationship as a sequence of effects. These effects begin with home environment, then student aptitude, and finally psychological and instructional environments. These environments include things such as peers, the classroom they were in, and how the material is covered in the classroom. Putting home environment first is founded on "consistent evidence that home environment influences the process of schooling well before the middle school years" Reynolds and Walberg (2022). In their study, they found that home environment plays a "pervasive role" in the learning for middle school students (Reynolds & Walberg, 2022). When it comes to mathematics attitude, they concluded that motivation is a bigger factor than the home environment. When they looked at instructional environment, the biggest factor affecting the students' attitude toward mathematics was the teacher's clarity of presenting the material. The students will have better attitude if they look at view the classroom and subject in a positive way.

The Third International Mathematics and Science Study (TIMSS) in Australia showed that students' background variables influence differences inachievement in Mathematics. Classroom and school variables also contributed to performance substantially (Lamb & Fullerton, 2020). These findings imply that several factors contribute to performance in Mathematics than have been identified. In Kenya, Mathematics is a

compulsory subject in both primary and secondary curricula. The general objectives of secondary school

Mathematics as outlined by the Kenya Institute of Education (2022) is to enable the students to:

1. Develop a positive attitude towards learning Mathematics

2. Perform mathematical operations and manipulations with confidence, speed and accuracy

3. Think and reason precisely, logically and critically in any given situation

4. Develop investigative skills in Mathematics

5. Identify, concretize, symbolize and use Mathematical relationships in everyday life

6. Comprehend, analyses, synthesize, evaluate and make generalization so as to solve mathematical problems

7. collect, organize, represent, analyses, interpret data and make conclusions and predictions from its results

8. Apply mathematical knowledge and skills to familiar and unfamiliar situations

9. Appreciate the role, value and use of mathematics in society

10. Develop a willingness to work collaboratively

11. Acquire knowledge and skills for further education and training

12. Communicate mathematical ideas.

While the objectives are clearly stated and need to be achieved at the end of the four years course, the reality is that performance in Mathematics is dismal with an average score of below 25 per cent in KCSE examination (Ayodo, 2019). According to Ramari (2024), performance in Mathematics has been generally poor.Given the persistent poor performance, it was important to establish factors contributing to this. Of particularinterest to the study was the influence of students' attitude towards mathematics with specific reference to content, objectives, methods and evaluation of Mathematics curriculum in Public Secondary Schools in Kisumu East District. Students' attitude towards Mathematics and mathematics learning and their implications for mathematics instruction have long been a common interest among mathematics educators. Attitude towards mathematics has been considered an important factor in influencing participation and success in mathematics. Weidmann and Humphrey (2022) state that investigation into student mathematics attitude and perspective not only informs teachers, parents, and administrators about students'

needs, but also serves as a catalyst for reform in mathematics education. There is research evidence showing that students' high performance in mathematics is not necessarily positively associated with their attitudes about mathematics and mathematics learning.

Results of Third International Mathematics and Science Study (TIMSS) revealed that while Japanese students outperformed students from many other countries in mathematics, they displayed relatively negative attitudes towards mathematics (Mullis, 2020). The reported gender difference in attitude towards Mathematics influenced some researchers to study some affective variables as mediators of gender differences in Mathematics achievement (Casey, 2021). However, little consensus existed among researchers regarding the influence of affective variables on gender and mathematics achievement. Some studies reported statistically significant effects of affective variables on the learning of Mathematics (Casey, 2018; Ho,2021; Ma and Kishor, 2017), while others indicated no relationship between attitude variables and Mathematics achievement (Papanastasious, 2020). Even among those studies that found a significant relationship, there was stilla controversy regarding the educational implications of the results. For example, some researchers concluded that although statistically significant, the mean effect size for the relationship between attitude towards mathematics and achievement in Mathematics was

not strong enough to have useful implications for educational practice (Ma and Kishor, 2017). One explanation for inconsistent findings regarding the relationship between attitude and Mathematics achievement was that such a relationship existed only with respect to particular Mathematics content areas (Casey,2017; Ma, 2017) and for specific affective variables (Ho, 2020). Studies have shown that factors such as motivation and attitude have impacted students' achievement (Cote and Levine, 2020; Singh, Granville and Dika, 2022).

Tymm (2021) investigated 21,000 students attitude towards math and suggested that the most important factors were the teacher and students' academic level, while age, gender and language were weakly associated with attitudes. Webster and Fisher (2020) study revealed that rural and urban students' attitude in math and career aspiration positively affected their performance. Altermatand colleagues (2022) found that students' attitude changes could be predicted and influenced by types of classmates. The student's attitude towards an academics subject is crucial factor in learning and achievement in that subject. Whether a student views himself or herself as a strong or weak person in a specific subject may be an important factor in his or her academic achievement. Papanastasiou (2022) showed that there is a positive relation between Mathematics and math achievement. According to Schreiber (2022), those who have positive attitudes towards Mathematics have a better performance in the subject.

The Trends in International Mathematics and Science Study (TIMSS) and Progress in International Reading Literacy Study (PIRLS) are the largest and most comprehensive international studies that Iran has ever participated in. In these international studies students' achievement in mathematics, science, and reading comprehension has been subjected to comprehensive analysis. In addition, numerous background variables affecting students' achievement have been investigated using background questionnaires. Although enormous valid data have been collected in the abovementioned studies, the number of secondary data analysis carried out on the available data is relatively few. The preliminary investigations of the TIMSS data in Iran indicated that there is a positive relationship between students' achievement in mathematics and home background variables such as "parents' level of education", "number of books at home", and "possessing dictionary, computer and study desk". However, Iranian students "who come from a family with the highest level of education of either parents" (8% of the students), "possess all the three educational aids" (5% of the students), and "have more than 200 books at home" (9% of the students) score much lower than the international average score (Kiamanesh&Kheirieh, 2001). Furthermore, the relation between theindex of mathematics self-concept and math achievement was positive and significant. The math achievement score of Iranian students

who benefited from high self-concept was much higher than that of those who had medium or low self-concept (Kiamanesh&Kheirieh, 2001). Moreover, these investigations indicated that students who have positive perceptions or attitudes towards mathematics showed better achievement in both mathematics and science (Kiamanesh, 2017). Although 54 percent of Iranian students have a high positive attitude towards math, their average mathematics achievement was much lower than the international average or even the performance of their counterparts in other countries (Mullis, 2020).

Summary of Literature Review

Attitude towards mathematics plays a crucial role in the teaching and learning processes of mathematics. It affects students' achievement in mathematics. The teaching method, the support of the structure of the school, the family and students' attitude towards school affect the attitudes towards mathematics. Usually, the way that mathematics is represented in the classroom and perceived by students, even when teachers believe they are presenting it in authentic and context dependent way stands to alienate many students from mathematics (Barton, 2020; Furinghetti and Pekhonen, 2022).

Researchers concluded that positive attitude towards mathematics leads students towards success in mathematics. Attempt to improve attitude towards mathematics at

lower level provides base for higher studies in mathematics. It also causes effect in achievement of mathematics at secondary school level (Ma and Xu, 2024).

CHAPTER THREE

METHODOLOGY

Introduction

This chapter presents the research design, area of study, population, sample and sampling technique. Theresearch instruments, validation of the instrument, data collection and the method of data analysis.

Research Design

The study employs descriptive research of survey type, to investigate the factors influencing the attitude of students towards the study of mathematics in secondary schools in Ilorin West L.G.A, Kwara State. The intent of the descriptive research is to describe the qualities, characteristics or facts of a given population, event or area of interest concerning the problem under investigation.

Population of Study

The population of the study comprises of some selected secondary school students in Ilorin West Local Government Area of Kwara State.

Sample and Sampling Technique

Out of all the secondary schools in Ilorin West Local Government, 5 schools were randomly selected for the research. Sample sizes of 100 secondary school students were

selected and it comprises both the males and the females. The sample included 50 students from public schools and 50 students from the private schools. Multistage sampling procedure was adopted and proportionate stratified sampling technique was used to select the sample size; purposive sampling technique was used to select the type of schools.

Instrument for Study

This study on The Factors Influencing the Attitude of Students towards the Study of Mathematics was done using the Quantitative – qualitative method. This was done by using a questionnaire where students were asked to use a Likert Scale to gather the data for the quantitative aspect of the study. The information was computed and analyzed for a correlation between the variables in the study. There wasalso a space for the subject to give open ended responses. The result of the questionnaires wasplaced into themes for reporting. The researcher recorded students' reactions to the impact of attitude on classroom performance.

A standardized questionnaire was used to collect data for the study. A questionnaire was constructed for only the mathematics students. Two hundred (200) questionnaires was produced which was used to retrieve responses from the students. The students' questionnaire was structured in two (2) sections, section A and B.

SECTION 'A' contain demographic data from respondent is about the students in mathematics based on their attitude and the students are asked to fill and complete the blank spaces.

SECTION ‘B’ is about the achievement in mathematics based on gender difference. Each of these sections is made up of five (5) items and the students were expected to fill and complete the blank spaces appropriately by ticking one of the statements to show how they agree to the statement.

The following are the letters showing the level of agreement to a statement;

SA – Strongly agreed

A – Agreed

D – Disagreed

SD – Strongly disagreed

Validation of Instrument

The questionnaire was examined and scrutinized by the supervisor and two experts from the field of mathematics to ensure that the items are related to the research questions and that they measure what they are designed to measure.

Reliability of the Instrument

Test-Retest Reliability To further assess the reliability of the instrument, a test-retest reliability analysis will be conducted. This involves administering the instrument to the same group of students on two different occasions (with a time interval of 2-4 weeks)

and comparing the results. A high correlation between the two sets of results will indicate good test-retest reliability.

Method of Data Collection

The researcher personally visited the sampled schools in company of an assistant and administered the questionnaires by the approval of the schools'Principal. Out of 300 questionnaires administered to the respondents, 200 were collected on the spot.

Method of Data Analysis

Mean was used to answer the researcher questions while chi-square test was used to test the hypothesis. The scoring of the responses is on 4 points.

SA = 4 points

A = 3 points

D = 2 points

SD = 1 point

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION

Introduction

This chapter deals with data presentation, analysis, interpretation and discussion of the result of the findings.

Table 1: Distribution of Respondents by Sex

Sex	**No**	**% Percentage**
Male	120	60.0
Female	80	40.00
Total	**200**	**100**
Age Range (years)	**Observed Frequency (No)**	**Valid Percentage (%)**
20-30	20	10.0
30-40	60	30.0
40-50	90	45.0
50 and above	30	15.0
Total	**200**	**100.0**
Class	**Observed Frequency**	**Valid Percentage (%)**
JSS I	60	30.0
JSS II	60	30.0
JSS III	80	40.0

Total	**200**	**100.**

Source: Researcher's Field Survey 2025

Table 1 shows that 60% of the respondents were males and 40% were the females. 20 respondents representing 10.0% of the sampled student (parent) were between 20-30 years of age, 60(30.0%) were between 30-40years, 90(45.0%) falls between 40-50years, while the remaining 30 (15.0%) were 50 years and above of age.

Descriptive Analysis

Research Question 1:Is there any significant difference in the performance of students as regards their attitude towards mathematics?

Table 1: Students' achievement in Mathematics based on attitude

S/NO	ITEM	SA	A	D	SD	REMARK
3	Mathematics is enjoyable and simulating to me.	58 29%	62 31%	40 20%	40 20%	Agree
4	There is nothing creative about Mathematics.	42 21%	10 5%	82 41%	66 33%	Strongly Disagree
5	Mathematics makes me feel uneasy.	70 35%	50 25%	55 28%	25 13%	Strongly
	Mathematics class is always boring.	52 26%	64 32%	30 15%	54 27%	Agree
	I do not like spending my time studying Mathematics.	44 22%	36 18%	65 33%	55 27%	Agree Disagree

Testing Hypothesis

Hypothesis (H_o) 1: there is no significance difference in the performance of students as regards their attitude towards mathematics.

Table 2: Contingency table for achievement of student attitude towards mathematics

S/NO	SA	A	D	SD	TOTAL	X^2_{cal}	X^2_{tab}
1	58 (53.2)	62 (44.4)	40 (54.4)	40 (48)	200		
2	42 (53.2)	10 (44.4)	82 (54.4)	66 (48)	200		
3	70 (53.2)	50 (44.4)	35 (54.4)	25 (48)	200		
4	52 (53.2)	64 (44.4)	30 (54.4)	54 (48)	200		
5	44 (53.2)	36 (44.4)	65 (54.4)	55 (48)	200		
Total	266	222	272	240	1000	104.82	21.03

The table above shows that X^2_{cal} = 104.82,X^2_{tab} = 21.03 and the degree of freedom = 12 and α = 0.05, since $X^2_{cal} > X^2_{tab}$ at $\alpha = 0.05$, therefore the null

hypothesis which states that, there is no significance difference in the achievement of students as regards attitude towards mathematics is rejected.

Research Question 2: Is there a significant difference in the attitude of students towards mathematics as regards gender?

To answer this question, the responses of the students were analyzed using frequency count and simple percentage.

Table 3: Analysis of students' performance in mathematics as regards gender

S/No	ITEMS	MALE		FEMALE		REMARK
		A	D	A	D	
3	Female students find mathematics more difficult than male students.	60 30%	55 27.5%	45 22.5	40 20%	Boys
4	Mathematics is mainly for male students.	45 22.5%	30 15%	75 37.5%	50 25%	Girls
5	Female students perform better than male in mathematics class.	36 18%	62 31%	82 41%	20 10%	Girls
6	Boys need mathematics more than girls.	80 40%	60 30%	38 19%	22 11%	Boys
	Female students are always absent in mathematics class.	60 30%	55 27%	50 25%	35 15.5%	Boys

Table 3 shows that 60(30%) out of 200 respondent males agree to item number 1 and 55(27.5%) disagreed. Also 45 (22.5%) of females agree and 40(20%) disagree. 45(22.5%) of males agree to item number 2 and 30 (15%) disagree. Also, 70 (37.5%) of the females agree and 50 (25%) disagree. 36 (18%) of males agree to item number 3 and 62 (31%) disagree also 82 (41%) of females agree and 20 (10%) disagree. 80 (40%) of males agree with item number 4 and 60 (30%) disagree while 38 (19%) of females agree and 22 (11%) disagree. Also, 60 (30%) males agree to item 5 and 55 (27.5%) disagree. While 50 (25%) of females 35 (17.5%) disagree.

Testing of Hypothesis

Hypothesis ($\boldsymbol{H_o}$)2: there is no significant difference in the attitude of students towards mathematics as regards gender.

Table 4: Contingency table for student attitude towards mathematics

	MALE		FEMALE			$\boldsymbol{X^2_{cal}}$	$\boldsymbol{X^2_{tab}}$
S/NO	A	D	A	D	TOTAL		

1	60	55	45	40	200		
	(56.2)	(52.4)	(58)	(33.4)			
2	45	30	75	50	200		
	(56.2)	(52.4)	(58)	(33.4)			
3	36	62	82	20	200		
	(56.2)	(52.4)	(58)	(33.4)			
4	80	60	38	22	200		
	(56.2)	(52.4)	(58)	(33.4)			
5	60	55	50	35	200		
	(56.2)	(52.4)	(58)	(33.4)			
TOTAL	281	262	290	167	1000	77.50	21.03

The table revealed that X^2_{cal} = 77.50 >X^2_{tab} = 21.03 at degree of freedom (DF) = 12 and α = 0.05 and there the null hypothesis is rejected.

Discussion of Findings

Based on the results of the findings, it is observed in table 2 that; the respondents strongly agreed with item 3 with the percentage of 35% and agreed to item 4 with percentage of 32% also disagreed to item 2 with percentage of 41% and strongly disagree to item 2 with the percentage of 33%. From table 2, it is revealed that at 5% level of significance and 12 degree of freedom X^2_{cal} = 104.82 >X^2_{tab} = 21.03, the null

hypothesis which states that there is no significant difference in the performance of students as regards their attitude towards mathematics is rejected. This implies that, there is a difference in performance of students as regards their attitude towards the study of mathematics.

It is observed that in table 3, male students agreed to items 1, 4, and 5 with 30%, 40% and 30% respectively and dis agreed to items 2 and 3 with 15% and 31% respectively. While the female students agreed to item 2 and 3 with 37.5% and 41% respectively and disagree to item 1, 4 and 5 with 20%, 11%, and 15.5% respectively.

From table 4, it is noted that at 5% level of significance and 12 degree of freedom X^2_{cal} = 77.50 >X^2_{tab} = 21.03, the null hypothesis which states that there is no significant difference in the attitude of students towards mathematics as regards gender is rejected. This implies that there exists a difference in the performance of students towards the study of mathematics as regards gender.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Introduction

This chapter deals with the summary, conclusion, recommendations, and suggestion for further study.

Summary of Findings

This study investigated the influence of attitude towards the study of mathematics in secondary schools in Ilorin West Local Government Area of Kwara State.

The research questions were answered while two hypothesis were formulated and tested at $\alpha = 0.05$.

From the research, it is discovered that attitude itself can affect level of energy input, perseverance and performance.The findings revealed that the female students perceive mathematics as difficult. Hence, attitude and gender difference have a significant impact in the performance of students in mathematics.

Furthermore, the research shows that students' attitude are influenced by teacher's method, the student's background, motivation, theclass size and government policy.

Conclusion

Based on the results from the data analysis, it is concluded that the factor investigated is considered a possibility. The implication is that gender and attitude difference affects students' performance in mathematics.

In general, self-concept refers to a complex system of learned beliefs, attitudes, and opinions that each person holds (Purkey, 1988) and is perhaps the basis for all motivated behavior. Franken (1994) states there is an increasing body of research which shows that it is possible to change the self-concept. Self-change is not something that people can will but rather it depends on the process of self-reflection. Through self-reflection, people often come to view themselves in a new, more powerful way, and it is through this new, more powerful way of viewing the self that people are able to develop possible selves. In addition to the self-concept factor, students' attitudes toward mathematics is the most important students' characteristic that has positive Standardized Regression Coefficient in predicting students' mathematics achievement.

Recommendations

In general, the implication of these findings could serve as a guideline for teachers, educational practitioners and curriculum developers so that they can ensure that the utilized educational policies, methodologies and activities would help students improve their academic self-concept as well as positive attitudes toward school subjects including mathematics. The findings of the present study are important for Nigerian education

system due to the fact that changing academic self-concept and attitude of students towards mathematics and improving the teaching procedures in the classroom are much easier to achieve than changing background factors affecting students' performance. The obtained results could serve as a basis for developing a hypothetical model for studying the direct and indirect effects of the afore-mentioned factors on mathematics achievement using Path Analysis or Structural Equation Modeling.

Limitations

The researcher feels that based on the data that was collected; several limitations could have influenced the data. Based on the data collected and tabulated, the research does show that there is a positive correlation between a student's overall attitude towards mathematics and their success in the classroom. The scope of this research is limited to Ilorin West Local Government Area of Kwara State. Finance and time constraint has been weighing set back to this research.

Application

The significance of this study could be used by both teachers and parents of students. Since the study does show a positive correlation, teachers might try and find ways to help students develop a positive attitude and thus improving their overall performance in the classroom. Parents could use this study in a similar fashion to help their children's success with mathematics.

Future Implications

If the researcher were to compute this study again, there would be a few additions made to the process. The researcher would begin by gaining school wide permission from the principal to survey all of the students in the school. This would increase the sample size, making the results more valid. It would also insure that more students who do not have a high level of success in the classroom are part of the data as well. The researcher would also include a parental component to the study looking to see what the overall attitude at home is toward math and how it is perceived.

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KWARA STATE COLLEGE OF EDUCATION, ILORIN

DEPARTMENT OF MATHEMATICS

QUESTIONNAIRE

ON THE TOPIC FACTORS INFLUENCING THE ATTITUDE OF STUDENTS TOWARDS THE STUDY OF MATHEMATICS IN ILORIN WEST LOCAL GOVERNMENT AREA, KWARA STATE AS A CASE STUDY, NIGERIA

Dear Respondents,

I am conducting a research work on FACTORS INFLUENCING THE ATTITUDE OF STUDENTS TOWARDS THE STUDY OF MATHEMATICS IN ILORIN WEST LOCAL GOVERNMENT AREA, KWARA STATE AS A CASE STUDY, NIGERIA

It will be highly appreciated if this questionnaire is completed as requested. Information given by you on this questionnaire is meant for research purpose and will be treated as strictly confidential.

Please respond to the items honestly as possible.

Yours faithfully,

Oladejo Samuel Feranmi

SECTION A

Demographic Data

Instruction: Please kindly tick (√) the appropriate answer in the space provided below:

Name:_____

Class (a) SSI ( ) (b) SSII ( ) (c) SSIII ( )

Sex: (a) male ( ) (b) female ( )

Age : _____

Marital Status: Married ( ) Single ( ) Divorce ( )

SECTION B

Instruction: Please respond to the questionnaire as honest as possible by ticking (√) the suitable answer as applicable to you. Use the key below.

SA- Strongly Agreed, A - Agreed, SD - Strongly disagreed, D- Disagreed.

S/NO	ITEM	SA	A	D	SD
1	Mathematics is enjoyable and simulating to learning.				
2	There is nothing creative about Mathematics.				
3	Mathematics makes students feel uneasy.				
4	Mathematics class is always boring				
5	I do not like spending time studying Mathematics.				
6	Female students find mathematics more difficult than male students.				
7	Mathematics is mainly for male students.				
8	Female students perform better than male in mathematics class.				
9	Boys need mathematics more than girls.				
10	Female students are always absent in mathematics class.				