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Perceived Causes of Students' Failure in Mathematics in Kwara State Junior Secondary Schools: Implication for Educational Managers

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ABSTRACT

This study examined the perceived causes of students' failure in mathematics in junior secondary based on three research questions and objectives. Stratified, purposive and systematic random sampling techniques were used to select 220 respondents from four secondary schools in Ilorin West Local Government Area of Kwara State, Nigeria. An instrument tagged "Perceived Causes of Students' Failure in Mathematics Questionnaire (PCSFMQ)" was used to elicit data from the respondents. Statistical Package for Social Sciences (SPSS) and Partial Least Square (PLS) were used to analyze the collected data. Specifically, PLS software was used to assess the psychometric properties of the data while SPSS was used to find answer to the research questions. Findings of the study revealed probable causes of students' failure in mathematics, which include insufficient number of qualified teachers in mathematics, lack of teaching aids/ instructional materials, frequent transfer of mathematics teachers from one school to another, poor socio-economic background of the student, poor teaching methodology. The findings also indicate that inappropriate period allocated for mathematics, as well as overpopulation of students in classroom caused students' failure in mathematics. Based on the findings, it is suggested that educational managers need to avoid mass failure in mathematics by ensuring that adequate mathematics teachers are available in their schools at all times so that students can be taught mathematics at all levels. Also, managers should ensure decongestion of classroom so as to enhance effective teaching and learning in mathematics. Recommendations were made and future research directions were suggested.

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1. Introduction

Globally, mathematics is regarded as one of the most important subjects in the school curriculum worldwide. It is seen as subject that has direct correlation with other subjects, particularly with science and technology (Federal Republic of Nigeria, 2013; Umameh, 2011). The subject cuts across primary and secondary levels of education. Mathematics remains one of the most difficult subjects in schools as perceived by students. There is general impression that mathematics is difficult by its very nature and because of this impression, majority of students have phobia for it (Ale, 2007; Ampadu, 2012; Ojimba, 2012; Onah, 2010; Ozochi, 2007; Saad, Adamu & Sadiq, 2014).

One of the major problems facing the educational system in Nigeria is the abysmal failure of student in public examination; particularly at the secondary level of education. The situation is so pathetic that stakeholders keep on wondering why this level of education has persistently failed to meet the

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yearnings and aspirations of the society (Ale, 1992; Saad, Adamu & Sadiq, 2014). According to WAEC results from 2009-2014, it revealed that secondary schools' students' performance in core subjects (mathematics inclusive) is on the decline. Specifically, in 2009, only 25.99% had five credits and above including mathematics and in 2010, there was a decline to 23.36%. Also, in 2011, the percentage of students with five credits rose to 30.9% and continued to rise to 38.81% in 2012. Unfortunately, in 2013 the performance declined to 36.57%, and further declined to 31.28% in 2014 (Saad, Adamu & Sadiq, 2014). Students' failure in Mathematics have been credited to teachers' methods of teaching, students' attitudes, unavailability of learning materials among others (Karue & Amukowa, 2013; Tshabalala & Ncube, 2013). The frequent poor performance of secondary school students in core subjects has been a recurring decimal and it has made the development of secondary education to be a difficult task (National Mathematical Centre, 2009).

Parents, guardian and stakeholders in education industry have variously commented on the performance of secondary school students particularly in mathematics (Asikhia, 2010; Adepoju, 2011; Eze, 2000; Tahir, 2006; Korau, 2006). Also, scholars have in the recent past identified numerous factors as the reasons for poor performance of students in school examination, among such factors mentioned include overpopulation of students in classroom, poor content and context of instruction and lack of good text books (Adepoju, 2011; Ugwu, 2001). Apart from the fact that the mass failure of students in public examination constitutes wastage on investment in secondary education, it puts a big question mark on the quality of secondary education in the country. This poor performance in mathematics has been attributed to two broad factors which include: Heredity and environmental factors which can be subdivided into students, home, teachers and school factors (Amazigbo, 2010; Edukugho, 2010). Students reason that mathematics is highly structured and is so abstract and required special intellectual attitude (Dauda, Jambo & Umar, 2016), and students attributed it to inadequate availability of mathematics teachers (Fakunde, 2001). It is also attributed to students' socio-economic background and overpopulation of students in mathematics classroom (Amazigbo, 2010; Bajelo, 2001; Obodo, 2000; Korau, 2006; Popoola & Olarewaju, 2010; Umar, 2013).

Since research shows that previous studies focused on students' poor performance in mathematics, therefore the present study examined the causes of students' failure in mathematics in junior secondary schools with a view to provide solutions.

1.1. Literature Review

The word "Mathematics" is a Greek word, meaning things that are learned. It defined it as the science of counting, measuring and describing of the shape of objects. It deals with logical reasoning and quantitative calculations (Merriam Webster Dictionary, 2018). According to Wikipedia (2018), mathematics as a subject is recognized as the foundation of science and technology without which a nation will never become prosperous and economically independent. This underscores the importance of mathematical competence of all the learners at all levels of education and a reason for making mathematics compulsory and one of the leading core subject in the secondary schools' curriculum. This importance accorded the recognition of the vital role it plays in contemporary society. Anibueze (2015) sees mathematics as the science that studies and explains quantities, numbers, measurements, and the relations between them. According to Fajemidagba, Salman and Ayinla (2012), mathematics can be described as a tool for the advancement of any science-based discipline such as astronomy, graphics, technology, analytical reasoning and industry. The importance of mathematics cannot be underestimated in human endeavors. Mathematics plays four important roles in four aspects, they are: mathematics as a key for economic prosperity, mathematics as a core skill in life, mathematics is full of beauty, and mathematics education (Ale, 2007; Anibueze, 2015; Fakeye, 2012; Olaleye, 2012). According to Attwood (2014) and Umameh (2011), mathematics is one of the core and essential subjects at primary and secondary levels of education due to its importance and usefulness in everyday activities and it is seen as the gateway to future professions in variety of feeds. That is why in developed and developing countries of the world, mathematics is recognized as the subject that must be taught at all levels of education. Mathematics has a most important bearing on the intellect as such. Study of Mathematics promotes habits of accuracy and exactitude, and prevents a man from being careless and slipshod. It sharpens the reasoning powers of a man and increases his mental alertness.

Mathematics is one of the languages of human life and unquestionably no more marvelous languages were ever created by the mind of man. Mathematics simplifies lengthy statements through its symbols, because it is free from verbosity, helps in the expression of ideas in an exact form and enable to understand and appreciate brevity, sharpness, precision, and logical beauty (Aremu & Sokan, 2003: Eze, 2000; Obodo, 2000; Satish, 2013; Ugwu, 2001) . In the same vein, mathematics fulfills the educational values such as intellectual, intellectual, aesthetic, social vocational, inter-disciplinary etc. in order to appreciate the educational values and instructional objectives of mathematics, therefore, the subject must be practiced in classrooms by utilizing the service of traditional methods, educational innovations and technological advancements (Ale, 2007; Ampadu, 2012; Bajelo, 2001; Etuk, Afangideh & Uya, 2003; Ozochi, 2007). A mathematically minded man is usually more dependable than one who is otherwise disposed. That is why the study of some Mathematics is compulsory up to the secondary stage of all education systems, and its habit has to be sedulously fostered (Wikipedia, 2018). In Nigeria, it is enshrined in its National Policy of Education (Federal Republic of Nigeria, 2013) that mathematics is mandatory and should be taught at primary and secondary levels of education so as to give a sound basis for scientific and reflective thinking and prepare them for the next level of education.

Meanwhile, several studies have been carried out on causes of students' failure in mathematics (Etuk, Afangideh & Uya, 2013). For instance, a study carried out in Indian secondary schools by Satish (2013) examined the causes of students' mass failure in high schools and found that causes of students' failure includes poor socio-economic background and lack of qualified mathematics teachers. He concluded that there is a general impression that mathematics is difficult by its very nature. Students reason that mathematics is highly structured and is so abstract and required special intellectual attitude. These students see the subject as something esoteric. Fakunde (2001) found lack of qualified mathematics teachers as one of the factors responsible for students' dismal performance in mathematics in Nigerian senior secondary schools. He stressed the need for qualified teachers in the teaching of modern mathematics in secondary schools. He said that teachers' factors are important to be examined with respect to effect of teaching and learning of mathematics because lack of competent and qualified teachers of mathematics contribute to the failure of teaching and learning of mathematics in junior secondary schools. Teachers have an important part to play in learning mathematics by students. Teachers' attitude towards the students can also create a suitable atmosphere for students to learn well. Popoola and Olarewaju (2010) concluded that lack of competent mathematics teachers responsible for failure of students in mathematics in Nigerian secondary schools.

Parental attitudes are more important in forecasting aspiration of students towards continuing their schooling and success in school than status. Parents should not expect too little or too much from their children. Too much pressure can lead to failure and dislike of mathematics. Critical remarks can encourage lukewarm attitude towards mathematics. They should therefore discuss the progress of their children with the teachers so as to assist the learners in their areas of difficulty (Aremu & Sokan, 2003; Asikhia, 2010; Attwood, 2014; Korau, 2006). Studies revealed that parents that are not financially buoyant can cause academic disturbance for learners. Korau (2006) found that perceived parental dominance tend to discourage the children in school learning. He concluded that students with poor parent, therefore they may not be able to afford the cost of some learning facilities and textbooks. Since such parents could not be able to provide for their children's needs, such children will develop nonchalant attitude to mathematics and other courses. Attwood (2014) in his study on causes of students' failure in mathematics concluded that parental attitude hindered students' performance in mathematics.

Eze (2000) and Obikwere (2008) found that the general hatred for mathematics by students was due to the teaching methods employed by teachers, rather than the difficult nature of the subject. Unqualified teachers employed wrong teaching methods of learning which result in general hatred for the subject by the students. He concluded that if mathematics is to be appreciated by students, teachers must use good teaching methods that can stimulate students to attend mathematics class. The studies of Karue and Amukowa (2013) and Tshabalala and Ncube (2013) in South African secondary schools found that improper use of teaching methods and teaching aids create confusion and misconception of mathematics principles. The indiscriminate use of aids occasionally results merely in entertainment and caused students' failure in mathematics. Obikwere (2008) and Umameh (2011) concluded that mathematics as a subject tends to be abstract and to remove the abstractness associated with mathematics, the use of teaching aid is very essential. Shortage of instructional materials in mathematics also caused low performance of students in junior secondary examination.

Furthermore, the study of Saad, Adamu and Sadiq (2014) concluded that students' negative attitude toward mathematics, anxiety and fear of mathematics, inadequate qualified teachers, poor teaching methods, inadequate teaching materials, overcrowded classes were some of the causes of poor performance in mathematics in senior secondary schools in Bauchi State, Nigeria. Similarly, Ojimba's (2012) study found that exhibition of poor knowledge of mathematics content by many mathematics teachers; overcrowded mathematics classrooms; acute shortage of qualified professional mathematics teachers; inadequate facilities and mathematics laboratories; undue emphasis on the coverage of mathematics syllabus at the expense of meaningful learning of mathematics concepts; and students negative attitude towards mathematics caused students' poor performance in mathematics. Korau (2006) observed that the schools population counts in thousands today against the hundreds of the previous years. Schools today are overcrowded in classrooms which make it impossible to talk of an ideal size of a classroom for effective teaching of mathematics. Thus, no effective teaching can take place under a chaotic situation where teacher cannot handle the large number of students effectively.

In addition, Fajemidagba, Salman and Ayinla (2012) investigated the effect of teachers' instructional strategy pattern on senior secondary school students' performance in mathematics word problems. They recommend that mathematics teachers should adopt the use of instructional strategy patterns in teaching mathematics in Ondo State secondary schools. Adeluku (2012) investigated the influence of instructional materials in teaching and learning of mathematics in senior secondary schools in Cross River State, Nigeria. A two group pre-test post- test quasi-experimental design was adopted for the study. The study revealed that students taught with instructional materials performed significantly better than those taught without instructional materials and also that the use of instructional materials generally improved students' understanding of concepts and led to high academic achievements. Oluwale (2010) studied the effect of instructional materials on the teaching of mathematics in secondary schools and concluded that instructional materials positively influenced students' academic performance. Maruff and Amos (2011) studied the effect of using improvised instructional materials on academic achievement of senior secondary school mathematics students in Oyo State, Nigeria. The research design adopted was quasi-experimental using pre-test post -test non-randomized control group. Purposive sampling was used to obtain a sample of three co-educational secondary schools. The researcher concluded that the utilization of improvised instructional materials promote and enhance effective teaching –learning process, thus, mathematics teachers should be encouraged to use them in their lessons.

Taken the above studies together, it is clear that literature indicates that majority of the studies conducted on the causes of students' failure in mathematics were limited to senior secondary schools, showing lack of studies on junior secondary schools. Therefore, since studies indicate lack of studies to be carried out on causes of students' failure at junior secondary school level, therefore the present study intends to contribute to the existing literature by investigating the perceived causes of students' failure in mathematics with specific focus on junior secondary schools in Ilorin West Local Government Area of Kwara State, Nigeria. Here is the research questions;

- Are there enough qualified teachers for the teaching of mathematics?
- Does socio-economic background of the students affect them in studying mathematics?
- Does poor attitude of students toward the nature of mathematics contribute to their failure?

To know if there are sufficient number of qualified mathematics teachers and instructional materials for the teaching of mathematics.

- To examine whether socio-economic backgrounds of the students affect them in studying mathematics.
- To know whether the attitude of students toward the nature of mathematics contribute to their failure.

2. Methodology

2.1. Population, Sample and Sampling Techniques

Our study adopted a quantitative research design. The study population consists of all junior secondary schools (public and private) students in Ilorin West Local Government Area of Kwara State, Nigeria. The total population for the study consists of 486 Junior Secondary School (JSS3) students in four secondary schools. However, 220 were considered as appropriate sample size for this study in line with Krejcie and Morgan (1970) sampling table. In order to distribute the sample size of 220, we employed quota sampling technique to distribute sample to the four selected schools as suggested by Cooper, Schindler and Sun (2006) and Creswell (2007). Specifically, quota sampling technique was used as a form of proportionate of stratified sampling, where a predetermined proportion of persons are to be sampled from diverse groups but on ease basis (Punch, 2013; Sekaran & Bougie, 2009). The use of quota sampling was adopted for two reasons: First, we were unable to have access to sampling frame, therefore quota sampling was deemed necessary and appropriate for the study even though the fact remains that finding cannot be generalized. Second, since the given larger population of 486 students, quota technique minimizes sampling error because it ensures homogeneity within a group (i.e. students in secondary schools) as well as heterogeneous across groups (i.e. different schools under federal, state or local governments). Furthermore, we followed the four steps involved using quota sampling technique in research as suggested by Cooper, Schindler and Sun (2006) and Sekaran and Bougie (2010). Firstly, we ensured that the population was well defined. Secondly, we ensured a well-defined stratum. So, the logical stratum for this study is Ilorin West Local Government of Kwara State, Nigeria with the selection of 4 junior secondary schools located in the Local Government. Thirdly, we calculated the average number of the population elements per strata and this was done by dividing the population size (i.e. 486) by the number of strata (4 schools). The calculation is given below:

Total Population: 486, Number of strata: 4, 220/486= 0.452. Therefore, the elements per strata is 0.452. Lastly, we found the number of subjects in a sample and this was determined by multiplying the number of samples in each population by element per strata (i.e. 0.452). The table below shows distribution of sample to four selected secondary schools in Ilorin West Local Government Area of Kwara State.

Table 1. Showing the Distribution of Population and Sample in the Schools

S/N	School	Number of Population	Element Per Strata	Sample
1	School A	153	0.452	69
2	School B	187	0.452	85
3	School C	81	0.452	37
4	School D	65	0.452	29
	Total	486		220

2.2. Study Instrument

An instrument tagged "Perceived Causes of Students' Failure in Mathematics Questionnaire (PCSFMQ)" was adapted from the studies conducted by Popoola and Olarewaju (2010), Saad, Adamu and Sadiq (2014) and Satish (2013) to examine the perceived causes of students' failure in mathematics. The questionnaire consists of two sections: Section A was designed for collection of students' profile which includes: gender, religion and age. Section B has items used to examine the perceived students' failure in mathematics. The instrument was designed based on four points likert scale. The likert scale is as follows: Strongly Agree: 1, Agree: 2, Disagree: 3 and Strongly Disagree: 4.

2.3. Validity and Reliability of the Instrument

Creswell (2007) defined validity as a measure of how well a test measures what it supposed to measure. It can also be defined as the accurateness of inferences which are based on enquiry (Creswell, 2009). In the light of the foregoing, this study ensured validity of the instrument by giving the instrument to experts in the field of the study to check and ensure that all the items contained in the instrument measure the items of the study. In order to ensure reliability of the instrument, 50 students from one school outside schools used for the main study were used for the pilot study. We have five reasons for conducting pilot study according to Sekaran and Bougie (2010). First, it helps to know the validity as well as the reliability of the adapted instrument of the study. Second, it helps to ensure that the wording of the instrument is good. Third, it helps to check whether the statistical analysis processes will be suitable for the main study or not. Fourth, it helps the researcher to ensure that the instructions are understandable and logical, and lastly it helps to establish relationship or contact with the respondents before embarking on the main data collection for the study. The result of the pilot study revealed cronbach's alpha of .84, .81 and .96 for the three variables of the study, suggesting reliability of the instrument (Creswell, 2009; Pallant, 2010).

2.4. Procedure for Data Collection and Analysis

After getting permission from relevant authorities of the four selected schools in Ilorin West Local Government Area of Kwara State, Nigeria, data collection follows. In order to ensure smooth data collection, we requested for three mathematics teachers from each of the schools visited to serve as research assistants. The selected mathematics teachers from each of the schools were trained on strategy appropriate for administering the questionnaire to respondents. Together with research assistants, the questionnaires were administered and retrieved back from the students. The data collection lasted for three weeks (Creswell, 2007). Furthermore, statistical Package for Social Sciences (SPSS) and Partial Least (PLS) were used to screen the collected data from the respondents. Specifically, SPSS was used to assess non-response bias, outliers, common method variance and multicollinearity of the data so as to ensure that data is free of errors while PLS software was used to assess the psychometric properties of the adapted instrument (Hair, Hult, Ringle & Sarstedt, 2014). Finally, SPSS was used for descriptive analysis of the data (Pallant, 2010).

3. Findings

3.1. Analysis of Response Rate of the Questionnaire

A total of 280 questionnaires were distributed to students of four selected secondary schools in Ilorin West Local Government Area of Kwara State, Nigeria. In order to ensure high response rate, several efforts were put in place. Out of 226 returned questionnaires, 66 were unusable simply because a substantial part of the questionnaires were not filled properly by the respondents and the remaining 160 usable questionnaires were used for analysis of the study. The table below shows the response rate of the questionnaire (Sekaran & Bougie, 2009).

Table 2. Response Rate of the Questionnaire

Response	Rate
Questionnaires distributed	280
Questionnaires Returned	226
Questionnaires not returned	54
Invalid questionnaires	66
Usable questionnaires	160
Response rate	80%

3.2. Profile of the Respondents

On gender, the above table revealed that most of the respondents are male (142) while the rest are female (18). On age, most of the respondents are between 1-13years (124) while the remaining (36) are more than 13 years of age. Lastly, the table indicates that most of the respondents are Muslim (103) while the remaining (57) are Christian.

Table 3. Profile of the Respondents

Variable	Category	Frequency
Gender	Male	142
	Female	18
	Total	160
Age	1-10years	124
	Above 13years	36
	Total	160
Religion	Muslim	103
	Christian	57
	Total	160

3.3. Assessing the Psychometric Properties of Individual Item Reliability

According to Duarte and Raposo (2010), the psychometric properties of individual items reliability can be assesed by examining the outer loadings of each of the construct measure. In order to achieve this, we used PLS software to assesss the individual items of the study by examining the outer loadings of the construct measure. Following the rule of thumb for retaining items with loadings between .40 and .70 as suggested by Hair et al., (2014), thus the individual items of the present study had loadings between .701 and .891 (see Table 4).

Table 4. Item Loadings

	Code	Loadings
Lack of teachers and instruction materials	Code 1	.701
	Code 2	.812
	Code 3	.710
	Code 4	.868
Socio-economic background	Code 5	.872
	Code 6	.866
	Code 7	.817
	Code 8	.870
	Code 9	.891
	Code10	.836
Attitude	Code11	.816
	Code12	.755
	Code13	.861
	Code14	.790
	Code15	.751

3.4. Response to Research Questions

Research Question 1: Are there sufficient number of qualified mathematics teachers and instructional materials for teaching mathematics?

From the below table, it could be seen that item 1 revealed that 140 (87.50%) out of 160 respondents, responded that insufficient number of qualified mathematics teachers' causes many disinterests in mathematics while 20 (12.50%) claimed that insufficient number of qualified mathematics teachers' does not cause disinterests in mathematics. Responses to item 2 show that 148 (92.50%) of the respondents agreed that frequent use of instructional material or teaching aids in teaching mathematics helps teacher to enhance knowledgeable students while 12 (7.50%) are not in support of using instructional material in teaching mathematics can enhance knowledgeable students.

Table 4: Insufficient number of qualified teachers and instructional materials for mathematics

S/N	Item	SA	A	D	SD	SA and A (%)	D and SD (%)
Code 1	Insufficient number of qualified mathematics teachers' causes many disinterests in mathematics.	72	68	10	10	87.50%	12.50%
Code 2	Frequent use of instructional materials in teaching mathematics helps teacher to enhance knowledgeable students	94	54	8	4	92.50%	7.50%
Code 3	Most parents do not provide the adequate textbook for their children and most mathematics textbook are difficult to read and understand	72	64	20	4	85.00%	15.00%
Code 4	Inadequate provision of teaching material to schools by the Government.	56	82	20	2	86.25%	13.75%

Note: SA (Strongly Agree); A (Agree); D (Disagree); SD (Strongly Disagree); SA/A (% of Strongly Agree and Agree); D/SD (% of Disagree and Strongly Disagree)

On item 3, Out of 160 responses, 136 (85.00%) of the respondents claimed that most parents do not provide the adequate textbook for their children and mathematics textbook are difficult to read and understand some concept (i.e. word problem as a result of their poor knowledge of English language) while 24 (15.00%) disagreed. Item 4 indicates 86.25% agreed that inadequate provision of teaching material or teaching aids to schools by the Government causes mass failure in secondary schools particular in mathematics, while 13.75% shows that teaching aids is not that useful in the teaching of mathematics.

Research Question 2: Does socio-economic background of the students affect them in studying mathematics?

From table above, item 5 shows that 146 (91.25%) agreed that poor socio-economic background affects students in learning mathematics while 14 (8.75%) disagreed with the statement. Also, item 6 shows that 88.13% of the respondents agreed that lack of interest in mathematics due to poor background from primary school contributing to students' failure of mathematics in junior secondary school while 11.88% disagreed with the statement and confirmed that students have enough mathematics background from primary school. Responses to item 7 shows that 93.13% of the respondents agreed that in conducive classroom environment affect effective teaching and learning of mathematics while 6.88% of the respondents disagreed with the statement that in-conducive classroom environment affects effective teaching of mathematics.

On item 8, out of 160 responses, 152 (95.00%) of the respondents claimed that frequent transfer of mathematics teachers from one school to another school affect the performance of students while 8 (5.00%) disagreed with the statement. As indicated in item 9, 140 (87.50%) confirmed that lack of constant study of mathematics contributes to students' failure in mathematics, which indicates that most students do not have interest in mathematics while 20 (12.50%) opposed the statement. Lastly, as shown in the table, majority of the respondents 153 (95.63%) believed that there are too many students in mathematics classes, indicating that class size affect the effective teaching of mathematics while few respondents 7 (4.38%) opposed the statement.

Table 5: Students' socio-economic background affects them in studying mathematics

S/N	Item	SA	A	D	SD	SA and A (%)	D and SD (%)
Code 5	Socio-economic background affects students in learning mathematics	96	50	10	4	91.25%	8.75%
Code 6	Lack of interest in mathematics due to poor background from primary school contributes to students' failure	85	56	15	4	88.13%	11.88%
Code 7	In-conducive classroom environment affect the effective teaching of mathematics	92	57	10	1	93.13%	6.88%
Code 8	Frequent transfer of mathematics teacher from one school to another affects the performance of students.	51	101	6	0	95.00%	5.00%
Code 9	Students' lack of constant study of mathematics contributes to their failure in mathematics.	50	90	16	4	87.50%	12.50%
Code 10	There are too many students in mathematics classes.	62	91	5	2	95.63%	4.38%

Research Question 3: Does poor attitude of students toward the nature of mathematics contribute to their failure?

Table 6: Poor Attitude and low interest of students towards mathematics

S/N	Item	SA	A	D	SD	SA and A (%)	D and SD (%)
Code 11	Students hate mathematics and it affect their learning performance in mathematics	110	38	10	0	92.50%	6.25%
Code 12	Students fear contributes to their poor performance in mathematics.	84	4	4	8	86.25%	7.50%
Code 13	Poor teaching methodology of some mathematics teachers scare students from mathematics.	73	64	17	6	85.63%	14.38%
Code 14	The period for teaching of mathematics most time is not appropriate for its easier assimilation by the students	24	4	71	61	17.50%	82.50%
Code 15	The abstract nature of mathematics when compare to other subjects, make it difficult to understand some concepts	100	42	12	6	88.75%	11.25%

Note: SA (Strongly Agree); A (Agree); D (Disagree); SD (Strongly Disagree); SA/A (% of Strongly Agree and Agree); D/SD (% of Disagree and Strongly Disagree)

As displayed in Table 6, item 11 shows that majority of the respondents 148 (92.50%) agreed that they hate mathematics while 10 (6.25%) disagreed with the statement. Also, item 12 revealed that 138 (86.25%) of the respondents agreed that students unjustly fear towards mathematics contributes to the failure of mathematics while 12 (7.50%) disagreed with the statement. From the data gathered, item 13 indicates that 137 (85.63%) respondents agreed that poor teaching methodology of some mathematics teachers scare students from mathematics while 23 (14.38%) of the respondents disagreed with the statement. Concerning item 14, majority respondents agreed that the period allocated for mathematics most time is not appropriate for students 28 (17.50%) while majority of the respondents 132 (82.50%) disagreed with the statement, indicating that the period allocated for mathematics is appropriate. Lastly, as shown in Table 6, it indicates that 142 (88.75%) of the respondents believed that abstract nature of mathematics when compare to other subject, makes it difficult to teach some concept while 18 (11.25%) disagreed with the statement.

4. Discussion

The discussion of findings is presented according to the three research questions formulated for the study.

The first research question was whether there were sufficient number of qualified mathematics teachers and instructional materials for the teaching of mathematics. The first research objective of the study was to know if there were sufficient number of qualified mathematics teachers and instructional materials for the teaching of mathematics. Our findings revealed that insufficient number of qualified mathematics teachers caused disinterest in mathematics, as perceived by students. The foregoing findings is in congruent with the studies of Satish (2013) and Saad, Adamu and Sadiq (2014) who found that non-availability of qualified mathematics teachers often responsible for students' hatred, as well as failure in mathematics. Also, as perceived by students, the frequent use of instructional material in teaching mathematics in school helps their mathematics teachers to enrich their knowledge in mathematics. This is in consonance with the study of Kiln (2000) who concluded that mathematics is a resourceful process deriving ideals and suggestions from problem idealizing and formulating the relevant concepts posing questions, with a view to intuitively deriving a possible conclusion. Thus, instructional materials are aids which teachers use for effective teaching and learning of mathematics. The findings are also in line with the studies conducted by Maruff and Amos (2011) and Oluwale (2010) who found that the use of appropriate instructional materials in school united learning and learners' mind and help them recall things that would have been easily fail to recall. Our findings also indicate students' perception that most parent are careless in purchasing adequate mathematics textbook for their children and this often lead to students' failure disheartening in mathematics in school. The finding is similar with the studies of Asikhia, (2010) and Korau (2006) who found that parent seems to generate idiosyncratic personal rules, which outline the functions arrangements of contexts, and behavior and reinforcement of their wards. Parents on their part barely call on their children to explain the problem or joys establish in their mathematics classes. In the same vein, our study revealed that inadequate provision of teaching materials in schools caused students' dismal performance in mathematics. The finding is in line with the studies conducted by Karue and Amukowa, (2013) and Tshabalala and Ncube (2013) who concluded that shortage of instructional materials affects students' performance in mathematics.

The second research question was whether socio-economic background of the students affects them in studying mathematics. Thus the second research objective of the study was to examine whether socio-economic background of the students affect them in studying mathematics. Our findings revealed students' perception of their parent with low socio-economic background affect them in learning mathematics. The finding is synonymous with the work of Korau (2006) who found that students with poor parental background affect students' performance in mathematics. He concluded that students with poor parent therefore may not be able to afford the cost of some learning facilities and textbooks. Since such parents could not be able to provide for their children's needs, such children will develop nonchalant attitude to mathematics and other courses. The finding is also synonymous with the study of Attwood (2014) who found that parental attitude caused students' failure in mathematics. Similarly, our findings show that in-conducive classroom environment affects effective teaching and learning of mathematics, while frequent transfer of mathematics teachers from one school to another affects the performance of students. This finding is in consonance with the studies conducted by Saad, Adamu and Sadiq (2014) and Karue and Amukowa, (2013) who concluded that lack of facilities caused students failure in mathematics. Also, our findings revealed that over population of students in mathematics classroom contributes to students' failure as claimed by the respondents used for the study. The foregoing is in congruent with the studies of Korau (2006) and Ojimba (2012) who found that over population of students in classrooms affect students' performance. Specifically, it makes it difficult to talk of an ideal size of a classroom for effective teaching and learning of mathematics.

Therefore, no effective teaching and learning of mathematics can take place under a hectic situation, where teacher cannot handle large number of students effectively

The third research question of the study was whether poor attitude of students towards the nature of mathematics contribute to their failure. In consonance with research question three, the third research objective of the study was to know whether the attitude of the students toward the nature of mathematics contribute to their failure. This study found that majority of the students do not like mathematics due to its nature. Specifically, the students tend to have phobia for mathematics and as such, contributes to their failure. The finding is in line with the one conducted by Satish (2013) on causes of students' failure in mathematics in secondary schools and found that students' phobia for mathematics have negative effect in their mathematics examination. In the same vein, as perceived by students, the poor teaching methodology of some mathematics teachers contributes negatively to students' failure in mathematics. The finding is in congruent with the work of Saad, Adamu and Sadiq (2014) who found that inappropriate use of teaching methods by mathematics teachers contributed immensely to students' abysmal performance in mathematics. Furthermore, our study found that time allocated for mathematics subject in school is not appropriate for students and this unable the teachers to cover topics as contained in mathematics curriculum. The finding on inappropriate time allocated for mathematics is in consonance with the work of Ojimba (2012) who concluded that time allocated for mathematics class in secondary schools was not appropriate. Lastly, we found that students' perception on abstract nature of mathematics, when compare with other subjects, scare them and thus contributes to their failure in mathematics. The finding is in line with study conducted by Fakunde (2001) and Popoola and Olarewaju (2010) who found that the abstract nature of mathematics was a serious concern for students thus makes them not to be interested in mathematics class.

4.1. Implication of the Findings for Educational Managers

The findings of the study revealed that there are several causes of students' failure in mathematics. These includes insufficient number of qualified teachers in mathematics, lack of teaching aids/ instructional materials, frequent transfer of mathematics teachers from one school to another, poor socio-economic background, poor teaching methodology, inappropriate period allocated for mathematics, abstract nature of mathematics and overpopulation of students in classroom. The foregoing findings have several implications to educational managers. Firstly, on insufficient number of qualified mathematics teachers and lack of teaching aids, educational managers need to avoid mass failure in mathematics by ensuring that adequate mathematics teachers are available in their schools at all times so that students can be taught at all levels. Similarly, managers should endeavor to provide teaching aids that are relevant to mathematics that teachers can employ when teaching mathematics in classroom. The availability of aids will help to simplify some difficult areas in mathematics. Secondly, on frequent transfer of mathematics teachers from one school to another, and poor socio-economic background, it implies that educational managers should halt frequent transfer of mathematics teachers, so that teachers that students are used to can teach them for a very long time without distraction. On poor socio-economic background, it is incumbent on educational managers to plead to students' parents to procure relevant mathematics textbooks for their children so that they can refer to the textbooks at any time. Thirdly, on poor teaching methodology and inappropriate period allocated for mathematics, educational managers should sensitize their mathematics teachers on the need to use appropriate teaching methods that suit topics in mathematics. Also, more periods should be allocated for mathematics in secondary schools so that all topics in mathematics can be covered. On overpopulation of students in classroom, classroom should be decongested so as to ensure quick students assimilation of what is been taught in mathematics. Specifically, managers should ensure that a class should not have more than 30-35 students. Additionally, our study suggests Ojimba's (2012) four strategies in which educational managers can use to stimulate students' love for mathematics. They are: groupings into students' ability during teaching of mathematics in the classroom; the strategy of constructivism should be imbibed in teaching mathematics, which is for students to learn and sustain their learning they must be in control of their learning. He also added that use of instructional aids and games as well as using computer-aided instruction are the strategies that can be used to improve performance of students in mathematics.

5. Conclusion and Recommendations

Based on the findings of the study, it can be deduced that several factors caused students' failure in mathematics which include insufficient number of qualified teachers, inadequate textbooks, socio-economic background, lack of interest in mathematics, inconducive classroom, frequent transfer of mathematics teachers, lack of constant study of mathematics and too many students in mathematics classes. In view of the foregoing, the following recommendations are made with a view to reducing students' failure in mathematics in junior secondary schools in Ilorin West Local Government Area of Kwara state, Nigeria. They are stated as below:

- Government at all levels (Federal, State and Local) should ensure that basic educational facilities such as learning materials, libraries, standard classroom blocks and laboratories are provided for schools so as to enhance teaching and learning.
- Adequate qualified and competent mathematics teachers should be recruited for schools.
- Mathematics teachers should be given regular training and retraining programmes (such as conferences, seminars and workshops that are related to mathematics).
- Mathematics teachers should encourage students on how to learn mathematics by reinforcing them when necessary.
- Mathematics teachers should constantly employ appropriate methods for teaching mathematics so as to stimulate students' interest in mathematics.
- Conducive classroom for the teaching of mathematics should be created.
- Frequent transfer of mathematic teachers from one school to another should be discouraged.
- Over-population of students in classroom should be discouraged.
- Adequate period should be allocated for mathematics class.

5.1. Future Research Direction

In this research, an attempt has been made to survey perceived causes of students' failure in mathematics in junior secondary schools in Ilorin West Local Government of Kwara State. Since our study was not able to carry out the research on a large scale due to financial and time constraints, thus only four secondary schools were selected for this study. We therefore suggest that similar study should be carried out in other local government areas so as to confirm or refute the findings in this study. This study used students as respondents for the study; additional study is needed to involve mathematics teachers. Specifically, future study could investigate teachers' perceived causes of students' failure in mathematics so that more findings can be collected. Future research could examine students' performance in mathematics by using secondary data (i.e., their results in mathematics) with a view to draw conclusion on students' failure in mathematics. Furthermore, since survey method was used for data collection in this study, future researchers who want to engage in this type of study, could use focus group discussion, interview, observation, and documentation as the instrument for data collection. In the same vein, mixed methods approach (quantitative and qualitative) could be used to investigate the causes of students' failure in mathematics so that a comprehensive data can be collected, which can be used to draw conclusion and generalization can be made.

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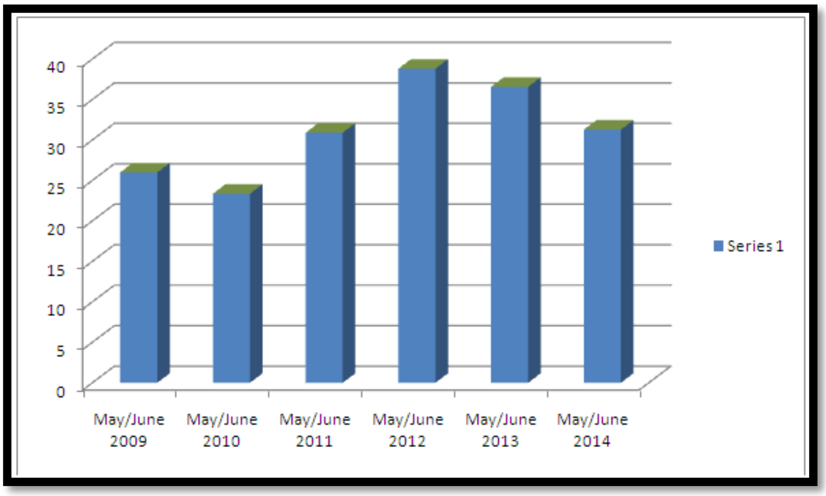
APPENDIX 1



A bar chart showing WAEC percentage results of students who made five credits and above including Mathematics and English from 2009 to 2014.