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STRATEGIES FOR REDUCING MATHEMATICS ANXIETY AS EXPRESSED BY SECONDARY SCHOOL STUDENTS IN ISEYIN LOCAL GOVERNMENT: IMPLICATIONS FOR COUNSELLING

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Abstract
This study aimed at exploring strategies to reduce mathematics anxiety among secondary school students in Iseyin Local Government. A descriptive survey research design was employed, with 400 students selected through simple random sampling technique. Data collection was carried out using an instrument titled "Strategies for Reducing Mathematics Anxiety Questionnaire (SRMAQ)." The instrument's reliability was ascertained through the test-retest method, resulting in a correlation coefficient of 0.81. The research question was analysed using mean and rank order, while the null hypotheses were tested using Independent t-test and One-Way ANOVA at a significance level of 0.05. The results indicated that secondary school students adopt a range of methods to manage their anxiety in mathematics, including regular practice, seeking assistance from tutors, breaking down problems, utilising online resources, participating in group study sessions, practicing relaxation techniques, and seeking support from peers and family. Furthermore, significant differences were observed in the strategies for reducing mathematics anxiety based on gender and school type, while no significant differences were found based on age and school location. Based on these findings, it was recommended that students should develop good coping strategies by practicing relaxation techniques, engaging in group study sessions to learn from others, seeking support from friends and family, and building self-confidence when facing mathematics anxiety.

Keywords: *Anxiety, Mathematics, Secondary schools, Students*

1. INTRODUCTION

Mathematics anxiety often arises from students' previous negative experiences when learning mathematics, whether in the classroom or at home. It is characterised by an abnormal and overwhelming sense of apprehension and fear, often accompanied by physiological symptoms such as sweating, tension, and increased heart rate, as well as self-doubt about one's ability to cope with

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mathematical challenges. Mathematics anxiety is generally perceived as a negative emotion towards mathematics, there are also some positive effects associated with it. Students experiencing mathematics anxiety tend to avoid mathematics problems either by avoiding or neglecting them.

Mathematics holds a crucial place in school education and is highly valued in higher education as well as in everyday life due to its practical applications and significance. However, many students harbour a negative attitude towards mathematics, impacting their problem-solving approach and leading to anxiety, ultimately resulting in poor performance in the subject. Ihendinihu (2013) highlighted that exposure to stressful environments can trigger strong feelings of pressure in students, leading to underperformance and contributing to mathematics anxiety. Espino et al. (2017) further explained that both mathematics anxiety and stressful situations can impair one's mathematical working memory, which is essential for regulating and controlling relevant information during mathematical tasks.

Gbolagade, Wahead, and Sangoniyi (2013) outlined several steps as key strategies to address mathematics anxiety and foster a more positive perception of mathematics; reinforce the child's confidence in their intelligence and abilities in mathematics learning, create a supportive learning environment for mathematics, encourage the child to engage with mathematics challenges, motivate students to adopt a positive attitude towards mathematics, and integrate information and communication technology (ICT) into teaching and learning. Also, students should promptly seek help when they encounter difficulties in mathematics concepts. If additional assistance is needed, it may be beneficial to seek tutoring from an individual other than the regular mathematics teacher, since others may present explanations in ways that are more accessible or clearer for the student to comprehend. Students should familiarise themselves with effective study techniques. For instance, they should space out their study sessions to enhance retention, choose a study environment with minimal distractions, and avoid over-studying to prevent information overload (Espino et al., 2017). Furthermore, reducing mathematics anxiety involves students adopting study methods that align with their specific learning styles. For example, visual learners tend to understand better when using tools like diagrams, charts, and videos; auditory learners grasp information more effectively through spoken explanations and conversations; and tactile or kinesthetic learners benefit most from hands-on tasks and active participation in learning.

Essentially, a number of researches had been conducted on nature of mathematics anxiety in Nigeria. For instance, Elekwa (2010) investigated the influence of collaborative teaching and learning methods on the mathematics achievement of senior secondary school students in Abia State, Nigeria. Likewise, Ihendinihu (2013) examined the role of the mastery learning approach in enhancing mathematics performance among secondary school students. However, the present researchers identified a lack of research in Oyo State—particularly in Iseyin Local Government—regarding strategies used by secondary school students to reduce mathematics anxiety. This gap in the existing body of knowledge led to the present

study, which aimed to explore effective strategies for reducing mathematics anxiety among students in the specified area.

2. OBJECTIVE AND HYPOTHESES

The objective of the study was to examine strategies for reducing mathematics anxiety as expressed by secondary school students in Iseyin Local Government. The study considered the influence of moderating variable of age, gender, school type and school location on the strategies for reducing mathematics anxiety as expressed by secondary school students in Iseyin Local Government.

2.1. QUESTION

1. What are strategies for reducing mathematics anxiety as expressed by secondary school students in Iseyin Local Government?

2.2 HYPOTHESES

The following research hypotheses were formulated and tested in this study at 0.05 level of significance:

1. There is no significant difference in the strategies adopted for reducing mathematics anxiety among secondary school students in Iseyin Local Government based on gender.
2. There is no significant difference in the strategies adopted for reducing mathematics anxiety among secondary school students in Iseyin Local Government based on age
3. There is no significant difference in the strategies adopted for reducing mathematics anxiety among secondary school students in Iseyin Local Government based on school type.
4. There is no significant difference in the strategies adopted for reducing mathematics anxiety among secondary school students in Iseyin Local Government based on school location.

3. METHOD

A descriptive survey design was used in this study to examine strategies for reducing mathematics anxiety among secondary school students in Iseyin Local Government. The research focused on students in Senior Secondary School Two (SSS2) within the area. According to the 2024 data from the Oyo State Ministry of Education, the total population of SSS2 students in Iseyin Local Government was 24,429. Based on the Research Advisor's guidelines, a sample size of 381 was recommended for this population at a 95% confidence level and a 5% margin of error. To account for possible attrition, the researchers increased the sample size by 5% (an additional 19 students), resulting in a final sample size of 400.

A multistage sampling method was employed in Iseyin Local Government to select the study participants. In the first stage, four secondary schools were randomly selected using the dip-hat method. In the second stage, Senior Secondary

School II (SSS2) students who were gradually preparing for the West African Examinations Council (WAEC) were intentionally chosen through purposive sampling. In the final stage, 100 respondents were selected from each school through simple random sampling technique, making a total of 400.

The instrument used for data collection, titled "Strategies for Reducing Mathematics Anxiety Questionnaire (SRMAQ)," was developed by the researchers based on information obtained from the review of relevant literature. Content validity of the instrument was established by experts from the Department of Mathematics at the University of Ibadan, while reliability was assessed using the test-retest method. The questionnaire was administered twice to a group of students at Olivet Baptist High School, Oyo, with a two-week interval. The correlation of the two sets of scores was calculated using Pearson's Product Moment Correlation, resulting in a reliability coefficient of 0.81. The questionnaire comprised two parts: Section A, focused on demographic data of the respondents, and Section B, which focused on strategies for reducing mathematic anxiety, respectively. Section B used a four-point Likert scale format (Strongly Agree = 4points, Agree = 3points, Disagree = 2points, and Strongly Disagree = 1 point). The benchmark for the instrument was established by summing the response points and dividing by 4, resulting in a mean score of 2.5 (i.e., 4+3+2+1=10/4=2.5). Mean scores equal to or above 2.5 were considered as strategies for reducing mathematics anxiety, while mean scores below 2.5 were not. Independent t-test and One-Way ANOVA were used to analyse the null hypotheses at the 0.05 level of significance.

4. RESULTS

This section provides an interpretation of the collected data and presents a detailed analysis of the study's results. A sample of 400 respondents was randomly selected across the schools.

Research Question 1: What are strategies for reducing mathematics anxiety as expressed by secondary school students in Iseyin Local Government?

Table 1 presented the views of secondary school students in Iseyin Local Government on various strategies for reducing mathematics anxiety. All items received mean scores above the 2.50 threshold, indicating that the students agreed the listed strategies were effective in reducing mathematics anxiety in the area.

Table 1: Mean and Rank Order of Strategies for Reducing Mathematics Anxiety as Expressed by Secondary School Students

N	Anxiety for mathematics can be reduced by:	Mean	Rank
10	practicing mathematics regularly to build my confidence	3.89	1st
5	seeking help from a tutor or teacher when I struggle with mathematics	3.85	2nd
3	breaking mathematics problems into smaller, manageable steps	3.83	3rd
14	using online mathematics applications for extra practice	3.81	4th

9	believing in my ability to improve my mathematics skills	3.79	5th
6	staying organised with my mathematics assignments and study materials	3.77	6th
2	managing my time effectively when studying mathematics	3.73	7th
8	setting achievable mathematics goals for myself	3.69	8th
19	using positive self-talk to increase my mathematics confidence	3.65	9th
20	engaging in group study sessions to learn from others	3.63	10th
11	taking breaks during mathematics study sessions to avoid burnout	3.61	11th
12	using visualise techniques to understand mathematics concepts	3.59	12th
13	relating mathematics problems to real-life situations for better understanding	3.57	13th
16	embracing mistakes as opportunities for learning in mathematics	3.55	14th
15	challenging negative thoughts about my mathematics abilities	3.52	15th
1	practicing relaxation techniques to reduce mathematics anxiety	3.48	16th
17	rewarding myself for accomplishing mathematics goals	3.45	17th
18	participating actively in mathematics class discussions	3.33	18th
4	reviewing and revising my mathematics notes regularly	3.21	19th
7	seeking support from friends when facing mathematics challenges	3.16	20th

Researcher's Fieldwork, 2025

Hypothesis One: There is no significant difference in the strategies adopted for reducing mathematics anxiety as expressed by secondary school students in Iseyin Local Government based on gender

Table 2: Mean, Standard Deviation, and t-test of Strategies for Reducing Mathematics Anxiety by Gender in Iseyin Local Government

Gender	N	Mean	SD	df	Cal. t-value	Crit. t-value	p-value
Male	180	52.60	6.13				
				398	4.57*	1.96	0.002
Female	220	56.85	5.73				

* Significant at 0.05 alpha level

Table 2 indicated a calculated t-value of 4.57, which was greater than the critical t-value of 1.96. Hence, the null hypothesis was rejected. This implied that gender significantly influenced the strategies employed by secondary school students in Iseyin Local Government to reduce mathematics anxiety.

Hypothesis Two: There is no significant difference in the strategies adopted for reducing mathematics anxiety as expressed by secondary school students in Iseyin Local Government based on age.

Table 3: ANOVA of Strategies for Reducing Mathematics Anxiety by Age in Iseyin Local Government

Source	df	SS	Mean Squares	Cal. F-ratio	Crit. F-ratio	p-value
Between Group	2	16.821	8.411	0.81	3.00	0.209
Within Group	397	4137.007	10.421			
Total	399	4153.828				

*Not Significant at 0.05 alpha level

Table 3 showed a calculated t-value of 0.81 compared to a critical t-value of 3.00. As the calculated value was less than the critical value, the null hypothesis was retained. This implied that age had no significant influence on the strategies adopted by secondary school students in Iseyin Local Government to reduce mathematics anxiety.

Hypothesis Three: There is no significant difference in the strategies adopted for reducing mathematics anxiety as expressed by secondary school students in Iseyin Local Government based on school type.

Table 4: Mean, Standard Deviation, and t-test of Strategies for Reducing Mathematics Anxiety by School Type in Iseyin Local Government

School type	N	Mean	SD	df	Cal. t-value	Crit. t-value	p-value
Private	193	60.70	6.93				
				398	2.01*	1.96	0.022
Public	207	68.22	6.73				

* Significant at 0.05 alpha level

Table 4 showed a calculated t-value of 2.01, which was greater than the critical t-value of 1.96. Therefore, the null hypothesis was rejected. This implied that the type of school significantly influenced the strategies adopted by secondary school students in Iseyin Local Government to reduce mathematics anxiety.

Hypothesis Four: There is no significant difference in the strategies adopted for reducing mathematics anxiety as expressed by secondary school students in Iseyin Local Government based on school location.

Table 5: Mean, Standard Deviation, and t-test of Strategies for Reducing Mathematics Anxiety by School Location in Iseyin Local Government

School location	N	Mean	SD	df	Cal. t-value	Crit. t-value	p-value
Rural	190	52.89	8.02				
				398	0.82	1.96	0.402
Urban	210	59.55	8.67				

* Not Significant at 0.05 alpha level

Table 5 showed a calculated t-value of 0.82, which was less than the critical t-value of 1.96. thus, the null hypothesis was accepted. This implied that school

location did not have a significant influence on the strategies adopted by secondary school students in Iseyin Local Government to reduce mathematics anxiety.

4.1 Discussion

The study indicated that secondary school students make use of various methods to handle and reduce mathematics anxiety. These include practicing mathematics regularly, seeking assistance from tutors, breaking down math problems into smaller, more manageable steps, utilising online resources and math applications for additional practice, participating in group study sessions to learn from peers, practicing relaxation techniques, and seeking support from friends and family when encountering math challenges. These findings aligned with those of Ihendinihu (2013) and Rajendra (2020), whose studies highlighted the importance of regular math practice, group study involvement, timely counselling, and active participation in class discussions as coping mechanisms for mathematics anxiety among students. Therefore, students agreed on strategies for reducing mathematics anxiety because these strategies are often practical, proven, and can significantly reduce the anxiety associated with mathematics. Some of these strategies include practice, breaking problems into smaller steps, seeking help when needed, positive self-talk, relaxation techniques, and changing perspectives about mathematics.

The findings indicated that gender significantly influenced the strategies adopted by secondary school students in Iseyin Local Government to reduce mathematics anxiety. This means that students' expressions on how to manage mathematics anxiety differed based on their gender. Male and female students might exhibit different strategies for reducing mathematics anxiety due to individual learning styles, societal expectations and previous experiences with mathematics. These differences could stem from psychological, social, or cultural aspects, leading to distinct approaches in managing anxiety related to mathematics. Differences in self-confidence, approach to problem-solving, and prior exposure to supportive environments could also contribute to varying expressions of effective strategies for reducing mathematics anxiety among male and female students.

Another finding indicated that there was no significant difference in the strategies used to reduce mathematics anxiety among secondary school students in Iseyin Local Government based on age. This implies that students' expressions concerning strategies for reducing mathematics anxiety were similar regardless of their age group. The similarity in strategies for reducing mathematics anxiety among students regardless of age differences could be due to the universality of certain coping strategies. Strategies like practice, seeking help from tutors or peers, adopting relaxation techniques, and building confidence through positive reinforcement tend to be effective across age groups. Also, shared educational experiences and common challenges in dealing with mathematics anxiety might contribute to this similarity among students.

The findings revealed that the strategies employed to reduce mathematics anxiety varied significantly among secondary school students in Iseyin Local Government based on school type. This implied that students' expressions concerning ways to address mathematics anxiety differed based on the type of

school they attended. The differences in the expression of strategies for reducing mathematics anxiety between students in private and public schools could be due to various factors such as teaching methods, resources available, class sizes, and economic backgrounds. Private schools might have different approaches to teaching mathematics or provide additional support systems that impact how students handle and cope with mathematics anxiety compared to students in public schools.

The findings further indicated that school location had no significant influence on the strategies adopted by secondary school students in Iseyin Local Government to reduce mathematics anxiety. This means that students' expressions regarding the strategies for addressing mathematics anxiety were similar, regardless of their school's location. This implied that the expression of secondary school students were not different on the strategies for reducing mathematics anxiety based on school location. Students in urban and rural schools might have similar expressions regarding strategies to reduce mathematics anxiety due to the universality of some effective approaches. These strategies might include supportive teaching methods, creating a positive learning environment, personalise assistance, and employing techniques to reduce stress or fear associated with mathematics. The commonality in experiences or educational practices could also contribute to this similarity despite the differences in school settings.

4.2 Implications of Findings for School Counselling

The major aim of counselling in school is to help students attain a balanced, well-adjusted, fulfilling, and contented life by fostering self-awareness. This study has identified various strategies for reducing mathematics anxiety among secondary school students in Iseyin Local Government. The reduction of mathematics anxiety through these strategies has significant counselling implications, including the promotion of positive coping mechanisms, enhancement of self-confidence, and addressing negative beliefs about one's mathematical abilities. Counsellors should intensity their effort in providing preventive measures by organising programmes that would assist students in reducing anxiety related to mathematics. Counsellors can employ cognitive-behavioral techniques, mindfulness practices, relaxation exercises, and the creation of supportive environments to assist students in managing and overcoming mathematics anxiety. Moreover, counsellors should collaborate with students to motivate them, set goals, develop plans, and monitor their progress. Encouraging students' intrinsic motivation to learn and fostering a commitment to their own success are also crucial aspects of counselling interventions aimed at addressing mathematics anxiety.

The findings suggest that counselling interventions to reduce mathematics anxiety in Iseyin Local Government secondary schools should consider gender and school type. For instance, counsellors might design gender-sensitive programmes that address unique anxieties boys and girls may experience, potentially due to societal expectations or self-efficacy differences. Since school type also plays a role, students in public schools might benefit from increased support in larger

classroom settings, possibly incorporating group counselling. In contrast, private school students might experience different pressures, such as high performance expectations, requiring targeted stress management strategies. Although no age-based differences were found, a uniform approach across age groups may still benefit students broadly. Similarly, the lack of significant differences based on school location means interventions could be standardised across urban and rural schools in the local government. Overall, a tailored approach based on gender and school type could foster a more supportive learning environment for all students.

5. CONCLUSIONS

The study concluded that many secondary school students employ various strategies to manage mathematics-related anxiety. These strategies include regular practice of mathematics, seeking assistance from tutors, breaking down mathematics problems into smaller, more manageable steps, utilising online resources and mathematics applications for additional practice, and participating in group study sessions to learn from peers. In addition, the findings showed that significant differences existed in the strategies adopted to reduce mathematics anxiety among secondary school students in Iseyin Local Government based on gender and school type. However, no notable differences were observed with respect to age and school location. Based on the findings of the study, it was recommended that:

1. Students should develop good coping strategies by practicing relaxation techniques, engaging in group study sessions to learn from others, seeking support from friends and family, and building self-confidence when facing mathematics anxiety.
2. Students, most especially females, should be assisted by their teachers in class and provided with guidance where needed to strengthened their interest and reduce anxiety in mathematics.
3. Students should seek early intervention strategies for reducing mathematics anxiety when needed from teachers or counsellors in school, irrespective of age.
4. Mathematics teachers in public secondary schools should be provided or equipped with textbooks and innovative teaching aids to reduce mathematics anxiety, increase student interest, and enhance students' understanding of the subject.
5. Students in rural areas should be helped by mathematics teachers or school counsellors to develop effective strategies to manage mathematics anxiety and foster a positive mindset towards mathematics, enabling them to overcome anxiety and boost their learning motivation.

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