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Shyness and Emotional Intelligence as Predictors of Mathematics Anxiety among Secondary School Students in Makurdi, Benue State

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Abstract

The study examined shyness and emotional intelligence as predictors of mathematics anxiety among secondary school students in Makurdi, North Central Nigeria. The study used ex post facto research design. Three standardized questionnaires were used for data collection from secondary school students in Makurdi. Six hundred and fifty (650) copies of questionnaire were distributed, however, 619 were returned, representing a return rate of 96.57%. Out of the 619 returned questionnaire, 18 copies were discarded due to improper completion, leaving a total of 601 copies that were used for the data analyses. Data was analyzed using hierarchical regression. The results revealed that shyness significantly and positively predicted mathematic anxiety, however, emotional intelligence was not found to predict mathematics anxiety. Recommendations were made based on the findings that students should be trained on social skills and emotional intelligence as this will help them overcome mathematics anxiety.

Keywords: Shyness, emotional intelligence, mathematics anxiety, secondary school students

Introduction

No subject is avoided and labeled negatively the way mathematics has been. Probably, a person experiencing the situation has mathematics anxiety. Mathematics anxiety involves feelings of tension that interfere with the manipulation of numbers and the solving of mathematical problems in a wide variety of ordinary and academic situations (Ballado, 2014; Richardson & Suinn, 1972). It was also described as a "sudden death" (Tobias, 1978), any situation when one experiences anxiety "when confronted with mathematics in any way" (Byrd, 1982), an irrational phobia (Hodges, 1983), and a rational fear rooted in real experience of failure and inadequacy (Perry, 2004). While mathematics anxiety could be seen as early as in elementary pupils (Ballado, 2014), it is disturbing that even pre-service teachers exhibit mathematics anxiety (Hembree, 1990; Jackson, 2008; Rayner, Pitsolantis & Osana, 2009).
Math anxiety is experienced by many students, as well as teachers and professionals in Makurdi, Benue State. Whether a pupil is in elementary school, primary school, secondary school, or tertiary institution, math anxiety affects students at alarming rates. Math anxiety is a vicious cycle that can affect a student's public performance in math, choice of math classes and choice of career. According to McCloy (2010), even one who excelled at the secondary school level, and who is enrolled in graduate courses and receiving straight A's is effected by an anxiety in mathematics. This anxiety thus sets up stage for a low efficacy in mathematics, thus further affecting one's performance and anxiety within the subject. Math anxiety may also prove to be more overwhelming as it is a compulsory subject for secondary school students in Nigeria.

Mathematics anxiety which has consistently been debilitate on mathematics achievement of students is a learned behaviour, often arising early in one's educational experience and once it lays roots, its damaging effects will last

through the school years. This learned behaviour could in part be due to social learning from parents and teachers with mathematics anxiety or negative perceptions of math. Parents or teachers might give children mixed messages (Yüksel-Şahin, 2008) about mathematics. They might emphasize how highly difficult mathematics is and at the same time tell them how mathematics skills are of essential importance for their future achievements. Vann (1993); Yüksel-Şahin (2008) observed that mathematics anxiety in mothers was significantly predictive of mathematics anxiety in children. This could be so for excessive expectations as well. Children of parents with excessive expectations whose love and acceptance is conditional to how well children live up to these expectations have high degree of anxiety (Geçtan, 1995). These circumstances might lead to self-consciousness about one's performance and to anxiety arising from not living up high standards of parents. Children's excessive self-critical attitude might cause anxiety disproportionate to their failure in living up to these expectations. In fact, studies do show that low self-esteem, confidence and efficacy are closely related to mathematics anxiety (Uusimaki & Nason, 2004; Woodard, 2004).

Negative school experiences might also contribute to the development of mathematics anxiety (Bursal & Paznokas, 2006). For example, teachers' threatening and authoritarian attitudes could lead to fearsome classroom climate in which student might hesitate to ask questions or answer the teachers' questions. Furthermore, students fearing their mathematics teacher might have a conditioned reaction to mathematics as well. Observing teachers giving mathematics homework as punishment could also cause students perceive mathematics as unpleasant. As punishment is inherently negative, extra mathematics assignments as punishment could play a role in cultivating negative attitude toward mathematics in students who receive the punishment as well as those who witness it. Low grades or failure in mathematics could also lead to mathematics anxiety or exasperate students' existing levels of anxiety for mathematics (Ma & Xu, 2004; Norwood, 1994). Failure in mathematics, fear and anxiety about it could cause extreme feelings of dislike about mathematics.

Based on the foregoing it is clear that many factors such as negative school experiences, low self-esteem, confidence, efficacy, etc. are closely related to mathematics anxiety. This study however, is concern with investigating dispositional factors such as shyness and emotional intelligence in predicting mathematic anxiety among secondary school students in Makurdi. Shyness is the "tendency to feel awkward, worried or tense during social encounters, especially with unfamiliar people" (APA, 2012). Not only are these psychological symptoms present, shyness may also produce physical symptoms, such as sweating or stomach complications (APA, 2012). Shy children will be weary in new social situations, will perceive such instances as threatening, and may experience high levels of anxiety (Coplan & Arbeau, 2008). Children face anxiety through perceived social evaluation when they are in a novel social situation. When children become older, they may not only experience anxiety, but also embarrassment in new social situations.

Shy students will very likely withdrawal from mathematics class activities such as asking or answering questions and will not participate in many academic and social growth opportunities. Many of these students will become dominated by the anxiety, making concentration on academic activities very difficult. Although many teachers may prefer to have shy behaviors in their classroom because the classroom can be more orderly (Coplan, Hughes, Bosacki & Rose-Krasnor, 2011), they view shy children as less capable of performing at a high level compared to their less shy peers (Hughes & Coplan, 2010). Shyness has a major effect on internalizing behaviors for children. For instance, they are much more likely to experience anxiety disorders (Anderson and Harvey, 1988). Emotional intelligence is another variable they may predict mathematics anxiety which this study also investigate its predictive power on mathematics anxiety. Emotional intelligence refers to the upgrade of some components such as self-awareness which implies understanding of emotions, strengths and weaknesses, values, attitudes and individual incentives; self-managing which refers to how to control or redirect scenarios, energy and internal stimuli; social awareness which refers to empathy with others, such as understanding and being sensitive to the others' feelings and thoughts and finally relationship management which refers to managing feelings of others such as influencing the beliefs and feelings of others, developing the ability of others and inspiring them, resolving conflicts, developing relationships and encouraging teamwork and cooperation (Guleryuz, Guney, Aydin & Asan, 2008). Emotional intelligence is the ability of perceive emotions, use of emotions to facilitate thinking, understanding emotions and finally regulating emotion. It is an individual's ability to perceive, understand, and regulate emotions (Mayer & Salovey, 1997). Emotional intelligence is the strongest indicator of human success (Goleman, 1998). The inability to

manage emotions has been identified as one of the causes of stress and consequent conflict, especially when it involves interpersonal or intergroup interaction and interrelationship.

The emotions of a student directly result from his/her emotional self-awareness, the latter being an integral part of the intrapersonal skills of emotional intelligence. The identification and recognition of emotions, either positive or negative, is extremely important in the preparation for mathematics examination or test, as well as during and after the examination. To be able to work with these emotions, it is very important that they are effectively identified.
Positive emotion will promote positive attitudes toward learning. Emotional intelligence is capable in encouraging students to possess positive attitude towards Mathematics which will thus eliminate mathematics anxiety (Hidi, Renninger & Krapp, 2004). The integration of emotions in teaching Mathematics is important and should be emphasized because emotional intelligence is related to attitude and feeling towards Mathematics which promote motivation and the development of other aspects of an individual.

Statement of the Problem

It is no longer news that, a credit grade is compulsory for any graduating secondary school student who is aiming at pursuing a higher degree in the higher institution (irrespective of the discipline he/she is pursuing). The irony however is that majority of these students dread mathematics as a subject. In desperate move to pass at all cost, many of these students have resulted to using dubious means to pass at all cost, which has grievous implication both for the students and the society at large later in life. This situation of course can be remedied by putting machineries in place to correct the wrong impression that mathematics is a difficult subject and must be dreaded. It is in the light of this that the present study set out to examine emotional intelligence, self esteem and shyness as correlates of mathematics anxiety among secondary school students in Makurdi North Central Nigeria with the intention of making useful recommendation based on the findings of the study.

Purpose of Study

The purpose of this study is to examine shyness and emotional intelligence as predictors of mathematics anxiety among secondary schools in Makurdi, Nigeria.

Research Questions

This study examine the following questions

i. Will emotional intelligence significantly and positively predict mathematics anxiety among secondary school students?
ii. Will shyness significantly and positively predict mathematics anxiety among secondary school students?

Research Hypotheses

For the purpose of this study therefore, three hypotheses were tested:

i. Emotional intelligence will significantly and positively predict mathematics anxiety among secondary school students in Makurdi.
ii. Shyness will significantly and positively predict mathematics anxiety among secondary school students in Makurdi.

Literature Review

Arigbabu, Balogun, Oladipo, et al. (2012) examined correlates of math anxiety among single-sex and co-educational schools in Nigeria. The study adopted an ex-post facto research design, and a total of 450 participants were randomly sampled for the study; 153 (34%) males and 297 (66%) females with their ages ranging between 16years and 24years. Mean age was 16.2years (SD = 1.8).Validated self-reported measures were used for data collection and three hypotheses were tested in the study. Gender correlated significantly negatively ($p<.001$, $r = -.216^{**}$); while conception about mathematics and age correlated significantly positively with math anxiety respectively ($p<.05$; $r = 103^{*}; 114^{*}$). Other variables of age, assertiveness, emotional intelligence, need achievement motivation, life satisfaction and self-esteem did not have significant correlation with math anxiety. They concluded that gender

difference exist in math anxiety among secondary school students, school type also influence manifestation of math anxiety among students. They recommended the finding therefore guide teachers, educators and counselors in guiding and counseling students and parents.

Erasmus (2013) examined the relationship between emotional intelligence, study orientation in math and math achievement of middle adolescent boys and girls. They selected 435 learners in Grades 9 and 11 took part in a quantitative study that involved the completion of two standardised questionnaires: an emotional intelligence questionnaire, the *Bar-On EQ-i: YVTM*, and the *Study Orientation Questionnaire in Mathematics (SOM).* Math achievement was measured by using the learners' final end-of-year math mark. He found that there the combinations of emotional intelligence facets and study orientation in mathematics dimensions that were potential predictors of math achievement differed for boys and girls.

In a study to find out the role emotion plays in learning mathematics, Uusimaki and Kidman (2004) designed an Online Anxiety Survey to measure three positive and three negative feeling responses as perceived by 16 third-year pre-service primary student teachers enrolled in a mathematics education curriculum unit at a major metropolitan university in Eastern Australia. The 16 participants (15 female and 1 male) were selected from a pool of 45 self-identified math-anxious students who volunteered for the study. The criteria for selection were degree of math anxiety, access to internet, and availability to attend workshops. The participants had to go through four phases. The first phase was to identify the origins of math-anxiety. This was possible through semi-structured interviews of half hour duration. Phase two was the enactment of the intervention program where the participants had to partake in four 60 minute activities introduced in workshop situations. The third phase was the summative evaluation where all participants were required to produce a written reflection about their experiences in the project. From their written reflections, the researchers identified potential relationships between perceptions of higher mathematical competence and lower levels of anxiety. Following the written reflections, the final phase of semi-structured interviews was conducted to further investigate any changes to perceptions that may or may not have occurred.

According to Uusimaki and Kidman (2004), the Online Anxiety Survey was effective in being able to record the emotional state of the participants before and after each of the four mathematical activities. They saw statistically significant increases in most of the participants' levels of positive feelings (i.e., comfort, confidence and feeling fine) and significant reductions in their negative feelings (i.e., nervousness and worry). It is the fear of failure and worry that affects performance even when the mathematics is well within the skill level of, as in this study, the pre-service student teacher.

Kasper (2012) reported in his study on shyness in the classroom and its impacts on learning and academic functions that students who are shy experience anxiety and avoid many educational situations. Teachers and peers may falsely belief these students are less capable and less intelligent. As a result, these students are unable to reach their full potential in the academic setting. These students face many difficulties in the classroom that go unnoticed. Shy students are less likely to demonstrate their knowledge, and teachers may develop poor perceptions of these students. They form weaker relationships with peers. Shy students also are likely to face more difficulties in their careers then their outgoing peers. Cognitive-behavioral therapy and medications have been used to help shy students; however, these are treatments available outside of the school. Teachers and other staff must be aware of the needs of shy students as well as know how to address them. Kasper (2012) provided insight to the difficulties experienced by shy students; however, research indicates schools provide very little if any support to these students.
Erdoğan, Kesici, and Şahin (2011) conducted a study in which its aim was to determine if achievement motivation and social comparison are significant predictors of high school students' mathematics anxiety. The study groups were comprised of 166 9th grade students still attending a private tutoring center. In this study, a multiple linear regression analysis was used. In multiple linear regression analysis, the relationship between the predictor variables, students' achievement motivation, and social comparison, and the dependent variable, mathematics anxiety, were tested. It was determined that achievement motivation alone, and achievement motivation and social comparison together are significant predictors of high school students' mathematics anxiety.

Methodology

Ex-post factor research design was used in the study. Six hundred and one (601) secondary school students in Makurdi, North Central in Nigeria participated in this study. Eighty percent (80.03%) of the participants were men. Their ages ranged from 11 to 18 years. Out of the 601 participants surveyed, males were 349 (58.06%) while females were 252 (41.9%). Out of the 641 copies of the questionnaire distributed, 619 were returned, representing a return rate of 96.57%. Out of the 619 returned questionnaire, 18 copies were discarded due to improper completion, leaving a total of 601 copies that were used for the data analyses. Three sets of instruments were used in this study, Emotional Intelligence Scale (EIS) developed by Schutte, Malouff, Hall, et al. (1998) was used to measure emotional intelligence of respondents. The tool contains 33 items. Items for this test were initially constructed on the basis of the theoretical work of Salovey and Mayer (1990), and represent three inter-related dimensions:

i. appraisal and expression of emotion,
ii. regulation of emotion, and
iii. utilization of emotion.

Items are rated on a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). A series of studies by Schutte et al. (1998) revealed adequate internal reliability estimates for the scale at .87 and above, and two week test-retest reliability of .78. Omar Dev, Ismi, Fauzee, Abdullah, and Geok (2012) in their study conceptualized the Emotional Intelligence Scale (EIS) as a 6-subscale model of emotional intelligence as used and suggested by Lane, Meyer, Devonport, Davies, Thelwell, Gill., Diehl., Wilson and Weston (2009). The six subscales are: utilization of emotions appraisal of other's emotions, optimism, appraisal of one own emotions, emotional regulation, and social emotional intelligence.

Shyness was measured using the revised Cheek and Buss (1981) Shyness Scale. This scale contained 13 items. The coefficient alpha value of the shyness scale is .77. Items were scored using a 5-point Likert scale, namely, "1" = "strongly disagree" and "5" = "strongly agree." Mathematics Anxiety Rating Scale – Revised (MARS-R) developed by Plake and Parker (1982) was used to measure math anxiety of respondents. The 24-item inventory is the revised and short version of the 98-item inventory that was first developed by Richardson and Suin (1972). The 24-item inventory measure math anxiety at two levels: LMA-Learning Mathematic Anxiety is the apprehensive reaction to being a student in a mathematic class. MEA- Mathematic Evaluation Anxiety which is the uncomfortable reaction to sitting for a mathematics test or examination. Plake and Parker (1982) reported a coefficient alpha of .98 while Dimale (1991) reported a split-half reliability coefficient of .81. Calculating the test with Mathematics Achievement Test, Dimale (1991) obtained a concurrent validity coefficient of .98.

Data was collected for the study using questionnaire. Questionnaire for assessing the variables of study were given out to the participants in five (5) secondary schools within Makurdi. Purposive sampling technique was used in selecting respondents. To facilitate the study, teacher in the selected assisted in the administration of the instruments. Regression analysis was used to test the hypotheses for formulated for the study.

Results

In testing the hypotheses formulated for the study, hierarchical regression was used.

Table 1 Hierarchical Regression of Mathematics Anxiety on Shyness and Emotional Intelligence Controlling for Demographic Variables

Independent Variables	Dependent Measure		
	Mathematics anxiety		
	Step1 (β)	Step2 (β)	Step3 (β)
Age	-.034	-.039	-.041
Sex	.004	.000	.011
Religion	-.011	-.021	-.002
Ethnicity	-.115 *	-.100	-.112*

Class of study	-.010	-.013	-.028
Shyness		.154**	.049*
Appraisal of others emotions			-.18*
Appraisal of own emotions			-.011
Regulations			.015
Social skills			.120
Utilization of emotions			.170
Optimism			.012
R^2	.018	.140	.076
Adj. R^2	-.003	.017	.041
F- ratio	.840	1.698*	.187

***p<.05; **p<.001**

In evaluating the research hypotheses formulated for the study, hierarchical regression was used. Mathematics anxiety which was investigated as a composite variable was regressed on the predictor variables (shyness and emotional intelligence), while the demographic variables of age, sex, religion, ethnicity and class of study were the control variables. The results of the analyses are presented in Table 1.

In step one of the regression analysis in the table, age, sex, religion, ethnicity, and class of study had no significant joint influence on mathematics anxiety (R^2 = .018, F = .840; p > .05) but ethnicity had significant independent negative influence (β =-.115, p< .05). This means that student's ethnic group influences his or her anxiety level in mathematics.

In step two, when shyness variable was entered along with the demographic variables, all had significant joint influence on shyness (R^2 =.140, F =1.698, p < .05), accounting for 14% variance in mathematics anxiety of secondary school students. It is observed in step two that none of the demographic variables contributed independently in predicting mathematics anxiety. This means students with high level of shyness tend to experience more mathematics anxiety, and vice versa.

In step three, the six facets of emotional intelligence were introduced and there was no significant joint prediction of mathematics anxiety (R^2 = .076, F = .187, p > .05), with all the variables accounting for 7.6% variance. With appraisal of others emotions (β = -.18, p <.05), independently and negatively predicting mathematics anxiety while appraisal of own emotions (β = -.011, p > .05), regulations (β = .015, p > .05), social skills (β = .120, p > .05), utilization of emotions (β = .170, p > .05) and optimism (β = .012, p > .05) did not contribute independently in predicting mathematics anxiety. This result indicates that shyness is a predictor of mathematics anxiety while emotional intelligence was not found to predict mathematics anxiety.

Discussion

The results demonstrated that shyness was a significant predictor of students' mathematics anxiety. This finding provides evidence that children who experience shyness are at a greater disadvantage than their peers in many areas, including academic and social functioning; both key components to education. The lack of understanding by peers, parents, teachers, and other school personnel may only cause more negative experiences for shy students, and thus make it harder to overcome those behaviors. Shy students have more difficulties learning in the classroom. Shy people are reported to have more difficulties in careers.

Students who are shy often feel elevated levels of anxiety when in social situations. They have fears about being reviewed and rejected. Shy students will actively try to avoid situations in which there are opportunities for social interaction. Shyness does not only afflict secondary school students, but can very commonly carry into adulthood. Children in school who are shy often have many more problems than their non-shy counterparts. These children are more likely to have internalizing problems such as depression and anxiety disorders. They often may experience

more negative emotional outburst than other students. Shy students often feel more levels of anger in which there is no outlet.

This finding lends credence to the work of Kasper (2012) who found that students who are shy experience anxiety and want to avoid many educational situations thus making it impossible for them to reach their full potential in the academic setting. The result of the hierarchical regression also support Corzier's (2001) view that shy children participate less in the classroom and feel anxious when they do. Furthermore, when a shy student does participate they will talk less and provide less meaningful material due to anxiety.

The second predictor variable in this study, emotional intelligence, did not predict mathematics anxiety. It implies that students who are high on emotional intelligence would show favourable behavior towards mathematics and would also alter their feelings towards that direction. This is possible because they have the skill of understanding and managing other themselves (Bar-On, 2006). High emotional intelligence students also have the ability to monitor their own and other students' feelings and emotions, to discriminate among them and to use this information to guide their thinking and actions towards mathematics, mathematics teacher and his or her entire academic work. Students high on emotional intelligence are also optimistic about the future as well as their ability in mathematical subject, have social skills and regulate their emotions. Because high emotional intelligent individuals know when and how to express emotion, as it does with controlling it (Cherniss, 2000) they are able to control mathematics anxiety.

The ability model of emotional intelligence explains that emotional intelligence involves perceiving and reasoning abstractly with information that emerges from feelings (Mayer & Cobb, 2000); it is possible that this why they can control anxiety. They have the ability to be aware of, understand, and express themselves, and have the ability to be aware of, understand, and relate to others, the ability to deal with strong emotions, and the ability to adopt to change and solve problems of a social or personal nature (Bar-On, 1997). With these dispositions, high emotional intelligent students are able to understand their state and relate with others in ways that would enhance their intellectual ability. Emotionally intelligent students are able to positively influence their teachers and mates possibly because of feelings of happiness they experience; happiness is an aspect of emotional intelligence. Happy individuals feel more of positive affect and less of negative affect compare to unhappy individuals.

The greater ability to manage student-teacher interactions during lesson time, possessed by high emotional intelligent students is likely to be predominantly caused by the social skills possessed by high emotional intelligence individuals. Emotionally intelligent person engages in efficient emotion regulation in both self and others. This monitoring makes it possible for the individual to strategically manage emotion in self and others to produce the desired outcome in a given situation. The persons who can differentiate emotions can cope with them more effectively. This is consistent with the findings Salleh and Othman (2014) who found emotional intelligence not to relate with mathematics anxiety but to statistically and significantly influence students' attitudes toward Mathematics. The result of this study is also in line with those conducted by Akinsola and Olowojaiye (2008); Taylor (2004) who in their separate studies found an inverse relationship between emotional intelligence and anxiety.

Implications of the Study

The current study hypothesized that shyness significantly predict mathematical anxiety among secondary school students. The finds of the study raveled provides evidence that secondary school students who experience shyness are at a greater disadvantage in developing mathematics anxiety. The lack of understanding by peers, parents, teachers, and other school personnel may only cause more negative experiences for shy students, and thus make it harder to overcome those behaviors. Shy students are less likely to know how to establish and maintain healthy relationships, and may seek dependence from the few people they are comfortable with, such as parents (Findlay & Coplan, 2009). Shy students need to receive assistance; otherwise the lack of social skills will cause future social problems at an older age. Shy students have more difficulties learning in the classroom, this may go a long way in affecting them in their careers. They are more likely to shift between jobs are less likely to receive promotions.

While there are many treatment options available to people experiencing shyness, these methods are costly and time consuming. Low social economic status appears to be a factor that many shy children share. Being that, medication and therapy are not a viable option for many children, and therefore other methods must be used (Scott, 2006).

These treatment options are also provided outside of the school. While school personnel may be able to monitor medication use, and provide some therapy services, they are unable to provide primary treatment to students.
Providing intervention in the school will provide access for those students that cannot receive the services that they could not otherwise obtain. Interventions can provide better outcomes for shy students. Shy students can be treated in a more effective way by teachers if they had a better understanding of this particular population. This training when provided will help shy students do away with mathematics anxiety thus improving their mathematics performance.

The study also hypothesized emotional intelligence significantly predicts mathematics anxiety. However, results of hierarchical regression showed an inverse relationship exists between the constructs of emotional intelligence and mathematical anxiety. Because of the inverse correlation between the emotional intelligence and mathematics anxiety, it can be suggested that emotional intelligence might prove to be a valuable domain of an intervention and prevention model to cope with mathematics anxiety. Bar-On (2002) posits that emotional intelligence develops over time and that it can be improved through training. It is implied that secondary school students need to be trained on emotional intelligence so as to do away with mathematics anxiety. This is because individuals who are high in emotional intelligence spontaneously feel more positive emotions. Secondary students therefore should be trained to learn how to cope with situations or problems that could emerge from learning mathematics, and how to develop appropriate skill to deal or cope with parental expectations.

Limitations of the Study

Although this study contributes significantly to our understanding of the contributions of shyness and emotional intelligence to mathematics anxiety among secondary school students in Makurdi, North Central Nigeria, there are some factors that limits the generalization of the results. One limitation of this study is that it focused on just one set of students, secondary school students. The replication of the current study in other set of students may be important in generalizing the results. Another limitation of the study is on the number of the variables studied. Other variables such as family background, heredity, peer influence, school environment, poor teaching methods, unqualified mathematics teachers, etc could also contribute to mathematics anxiety beyond the effect of shyness and emotional intelligence. The exclusive reliance on self-report measure may have led to common method bias associated to such research. Finally, all measures in the present study were collected on a single questionnaire at one time. A longitudinal study may help us to establish cause and effect relationship.

Conclusion

Based on the findings, it was concluded that

i. Shyness significantly and positively predicts mathematics anxiety among secondary school students;
ii. Emotional intelligence did not significantly predict mathematics anxiety among secondary school students.

Recommendation

The following recommendations are made based on the findings of the study

i. Due to the lack of any interventions being used or even studied, it is imperative that research is conducted on the needs of these students, and schools are able to take the necessary steps to ensure a more conducive and less stressful environments for shy students.
ii. Shy students should be provided with assistance and be trained to in social skills.
iii. Students should be trained on emotional intelligence as this will help them overcome mathematics anxiety.

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