CERTAIN STRATEGIES FOR REDUCING MATHEMATICAL ANXIETY

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Introduction

Our nation needs, today effective and productive citizens who display scientific and constructive thinking and attitudes in all walks of life. The child of today is to be prepared for the new era of science and technology for which a strong base of mathematics education is a necessity. Many changes and improvements are being brought in the field of education. In mathematics this change is vast and manifold as mathematics occupies the place and pride in the present age of science and technology. Science, mathematics and technology have been recognized as the tools for development. The ability of any nation to compete successfully in the global market today, to a large extent, depends on the mathematical literacy of its citizens. Utilization of science, mathematics and technology has been interlinked with the improvement in productivity and wealth creation of a nation. This explains why it is important to have skilled human resources in science, mathematics and technology as a nation.

Mathematical anxiety is a serious obstacle for many children across all grade levels. Math anxiety has been studied for many years but has recently received renewed attention. Researchers now believe that implementation of strategies to prevent or reduce math anxiety will improve math achievement for many students. A teacher must do more than just give great lectures. Success for many students is related to how we make them feel in class (Fiore,1999)

Mathematical anxiety is not limited to a minority of individuals or to one region. International comparisons of high school students show that it is a global phenomenon. Students' math anxiety is often based on years of painful experience with math. Studies indicate that the origin of math anxiety is complex and that anxiety forms as a result of personality, intellectual and environmental factors.

Strategies for Minimizing Math Anxiety

Strategies for minimizing anxiety include

(a) ***instructional strategies*** such as retesting,mastery learning, collaborative learning, ,using manipulatives,activity oriented learning, relating math to life, using ICT

(b) non-instructional strategies, such as developing strong skills and good attitude towards mathematics,relaxation therapy and psychological treatment.

(a)Instructional Strategies

Math anxiety is a complex and reoccurring issue that can affect both teachers and students through different experiences. A consequence of math teaching anxiety is the negative result of the anxiety to potentially be transmitted to students which affects student performance and competency in math.

(i) Retesting

Retesting and mastery learning are possible instructional techniques that decrease math anxiety. Retests may help students counter past feelings of failure and offer an emotional safety net for test anxious students. Retesting has become a more feasible option as test generators allow for effortless creation of multiple versions of exams.

(ii) Mastery learning

An emphasis on quality of thinking over rote memorization, enhancing the perceived meaning and relevance in mathematic tasks, understanding student perceptions ofthe meaning behind making mistakes, and examining the nature of evaluation and assessment all have direct relevance to students' achievements.Creating mastery-oriented classrooms help to prevent or reduce the anxiety students experience during mathematics.

(iii) Collaborative Learning

Collaborative learning method decrease mathematics anxiety in students significantly and increase help seeking behaviour.

(iv) Manipulatives

Studies indicate that most elementary school children show greater interest in math class and are better able to master mathematical concepts and skills when teachers teach with concrete materials, such as manipulatives. Using manipulatives to represent abstract ideas allows young learners to more easily understand the concepts they represent.

(v) Activity oriented learning

Students learn best when they are active rather than passive learners. Students must be engaged in exploring, thinking, practicing, and using knowledge, rather than listening to verbal descriptions of concepts. Teachers incorporate games and activities into math lessons so that students can experience math in a hands-on fashion

(vi) Relating math to life

Teachers should make math relevant to students' lives and make connections to everyday applications, such as counting change and going grocery shopping, to help students realize that math is an important and useful tool.

(vii)Using ICT

Technology can be used as a helpful tool to reduce math anxiety in the classroom at all grade levels.

(b) Non-Instructional Strategies

(***i) Developing strong skills and good attitude towards mathematics***

Teachers should take extra effort to develope strong skills and good attitude towards mathematics.Researchers have found that teachers with math anxiety or a negative view of math contribute to the development of math anxiety in their students

(ii) Relaxation therapy and psychiatric treatment

They are non-instructional avenues for math anxiety reduction.Some researchers recommend that students practice relaxation techniques to reduce math anxiety such as meditation, yoga,visualization, positivemessages.Some of the emotional needs of students may best be handled outside of theclassroom.

Conclusion

Math anxiety is the way in which students' lack of confidence in that subject undermines their academic performance and is a serious obstacle for many children across all grade levels. Mathanxious students learn less math than their low-anxious peers because they take fewer math classes and get poorer grades in the math classes they do take.

Math anxiety has been recognized as a non-intellectual factor that impedes math achievement.

A number of researchers have hypothesized that math anxiety disrupts performance because it reduces students' workingmemory, leaving them unable to block out distractions and irrelevant information or to retain information while working on tasks.The combined effort of teachers, students and parents can reduce mathematical anxiety in a great level.

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