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Parents and Teachers Role in Reducing Mathematics Anxiety

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***Abstract*--- The Social, economical and mental status of the children as a whole must be looked after for developing stragdy to develop the mathematics education .Large classes and poor physical facilities are common problem for teachers and students. Mathematics anxiety is prominent in majority of school going students as well as their parents. Locally conducted seminars on regular basis to understand the feelings of students, parents/guardians may help. In order to minimize students' worries, struggles and anxiety with mathematics, it is necessary that mathematics is taught and learnt with fun. Stress must be given to build upon the students existing logical thinking and improve it by solving exercises. The core area of concern is a sense of fear and failure regarding mathematics among a majority of school going children. Crude methods of evaluation and assessment are the basic reason of students' detachment from the subject. Examiners must not involve themselves in mistake finding mission. This situation can be changed mainly by the teachers in their individual schools. So, actual teachers training at local level involving the teachers of higher learning institution of the region on regular basis may develop the situation. Thus mechanism should be developed to involve the college/higher secondary teachers of mathematics in confidence building of the children.**

***Key words*------ Parents, Anxiety, Classroom, Society, Rural areas.**

I. INTRODUCTION

Simply introducing NCERT or equivalent Syllabus in mathematics may not improve the status of mathematics education in the north east. The social, economical and mental status of the children as a whole in interior parts must be looked after for developing stragdy to develop the mathematics education.

Shortage of mathematics teachers at the primary school level is one of the major areas of concern. In many rural parts there is not a single mathematics teacher. As per census of India 2011, an overwhelming 86 per cent of the state's population live in rural areas, only 14 per cent are urban residents. In Census 2011, literate is defined as "A person aged 7 and above who can both read and write with understanding in any language." In Assam rural literacy is 70 per cent while in urban it is 89 per cent. The situation is similar in other north east states.

The quality and quantity of mathematics education can only be improved if the parents and students of weaker section understand that mathematics is not only for extraordinary students. Common myths and misconceptions about mathematics is that it is a genetic thing. Some people have it and some people don't. most of the parents demands their wards to labour hard in other subjects as they think mathematics is meant only for specific class of children.

Most students experience a certain degree of mathematics anxiety at some point during their school careers. The mere mention of the word "mathematics" can cause anxiety and trigger unusual behavior in some children.

Since mathematics anxiety does produce real symptoms and emotions within people, it is important for parents to distinguish these characteristics within their children when they happen and to recognize their child is experiencing mathematics anxiety. Many students and adults do not understand why they experience mathematics anxiety. They automatically assume that it is because they are unintelligent or were born without a talent for mathematics. This simply is not true. Even the most skillful mathematicians may sometimes experience symptoms related to mathematics anxiety. Anxiety in mathematics usually begins in late elementary school / middle school and continues to grow as students enter new levels of abstraction and begin to have a wider variety of teachers, textbooks, and learning experiences. Research is showing that comfort with mathematics and success in later years is largely a factor of a student's number sense and the innumeracy that is gained in the first few years of education. Mathematics anxiety can escalate and become worse over time if not addressed.

Mathematics is actually much more natural than we often think it is. . Everybody's got the ability; it's just a matter of the degree to which we use it and practice it that makes us successful. A solid mathematics foundation is vital for children to succeed. Without solid mathematical skills, children will probably have a lot of trouble in school and afterwards. Students with weak basic mathematical skills find the subject increasingly confusing and difficult.

As early as kindergarten, kids are introduced to mathematics. As they progress in grade school, children will learn mathematical skills such as addition, subtraction, multiplication, division, and more. While

mathematics can be fun and challenging for some children, it can be a very different experience for others. For many students, working with numbers and mathematical concepts can lead to math anxiety, in which they can develop a fear and stress about math. They can feel anxiety about not getting the answers right and not understanding what is being taught. They may feel frustrated and upset about not doing well in mathematics, and may develop a dislike for the subject, making the development of mathematical skills even more difficult. Often, children develop mathematics anxiety when they don't master early math skills, and then are continually expected to learn additional math when they haven't yet gained the fundamental knowledge.

According to Mid Term Assessment Survey, DPEP(*District Primary Education Programme*) Government of India the average performance of class I students in the state of Assam has ranged from 64.4% to 76.98% in language and from 70.84% to 82.54% in mathematics. The students have demonstrated better performance in mathematics than in language. But the data is completely different in survey of class III. The average performance of class III students in the state of Assam has ranged from 46.33% to 58.01% in language and 46.07% to 57.27% in mathematics. The gap widens in higher classes.

II. Mathematics Anxiety And Its Common Causes

Tobias (1993) described mathematics anxiety as feelings of tension and anxiety that interfere with the manipulation of numbers and the solving of mathematical problems in a wide variety of ordinary life and academic situations. Mathematics anxiety can cause one to forget and lose one's self-confidence. She stated that students get feelings of uneasiness and mental disorganization when asked to perform mathematical problems, often developing a fatalistic attitude toward mathematics.

Mathematics anxiety has been defined in a variety of ways. More than a dislike toward mathematics, Smith (1997) characterized mathematics anxiety as an uneasiness when asked to perform mathematically. It is an irrational fear of mathematics that can range from a simple discomfort associated with numerical operations to total avoidance of mathematics and mathematics classes (Mathison, 1977).

Most common symptoms of math's anxiety are panic and lack of confidence. The student has a feeling of helplessness that will not go away. The student anticipates the feeling of helplessness and expects to never know the answer to the problem. They rely on other people in their life to help them even if they are very much correct in their math's work. Inappropriate educational practices can also cause mathematics anxiety in children.

According to Assam Human Development Report, Assam has an extremely high proportion, more than a third of its population, under the poverty line. The percentage of poor in Assam is the highest among the seven States of the North East. It has a substantially higher percentage of poor people than the all India.The rural - urban divide is apparent. Two out of five people in rural areas are likely to be under the poverty line, while in urban Assam, the incidence is less than one in ten. Rural poverty is very much higher than urban poverty and the incidence of rural poverty is much higher than the all India figure. The incidence of child labors (especially farm based work at specific times of the year and the retention of girls for household work) is reported to be significantly higher in poorer families. Girls from poor families also have lower transition rates from the primary to the middle stage of schooling.

Many children are not able to go to school or complete even primary schooling, for a variety of reasons. One major reason is poverty, which impacts on participation and completion rates, and even achievement. The cost of sending children to schools is a deterrent for the poorest families. Even though education at the elementary stage is 'free', several studies show that indirect costs associated with children's education are around Rs. 300 per annum at the primary level and more than Rs. 500 at the middle stage. First generation learners are disadvantaged by the fact that their parents may not be able to help them with their schoolwork mainly in mathematics. In such cases, children may fall behind with their schoolwork, lose interest in study and later, drop out or try to complete aiming just pass marks in mathematics. Girls are often entrusted with responsibilities of sibling care, and with domestic tasks. This may impact their progress in school, or even prevent them from attending school. In areas of difficult terrain, living conditions, or even migration, may hinder school access and participation. For example, in *char* areas, in the n, there is an almost inevitable movement of people away from their semi-permanent location.

III. Role Of A Teacher/Coach

Teachers need to know their students in order to teach them most effectively. They also need to know how their students see themselves as basic learners. Teachers can then start from that point and help students see themselves as mathematical thinkers who are capable of learning mathematics. One of the major forces behind a successful mathematician is his/her teacher who is expected to develop the insight of the subject. Research confirms that pressure of timed tests and risks of public embarrassment have long been recognized as sources of unproductive tension among many students. Three practices that are a regular part of the traditional mathematics classroom and cause great anxiety in many students are imposed authority, public exposure and time deadlines. Although these are a regular part of the

traditional mathematics classroom cause great deal of anxiety. Therefore, teaching methods must be re-examined. Consequently, there should be more emphasis on teaching methods which include less lecture, more student directed classes and more discussion.

Given the fact that many students experience mathematics anxiety in the traditional classroom; teachers should design classrooms that will make children feel more successful. Students must have a high level of success or a level of failure that they can tolerate. Therefore, incorrect responses must be handled in a positive way to encourage student participation and enhance student confidence.

Everyone is capable of learning, but may learn in different ways. Therefore, lessons must be presented in a variety of ways. For example, different ways to teach a new concept can be through play acting, cooperative groups, hands on activities and technology(if possible).
Math anxiety is a complex issue that can visible itself in a wide variety of ways, and therefore teachers should not adopt just one method for treating it.The more methods a teacher is able to use, the more likely that they will be successful with the highest percentage of students.

It is important that all teachers are consistent in terms of having a knowledge base for teaching mathematics. Teachers not only need to come to terms with their own mathematics anxiety, but also need to be familiar with best practices for teaching mathematics. Teacher's own math anxiety can interfere with and often create math anxiety for their students. To paraphrase a Chinese proverb (W. V. Williams, 1988, p.103):

"Tell me mathematics, and I will forget; show me mathematics and I may remember; involve me...and I will understand mathematics. If I understand mathematics, I will be less likely to have math anxiety. And if I become a teacher of mathematics, I can thus begin a cycle that will produce less math-anxious students for generations to come."

IV. Role Of Parents/Family Members

Parents can play a significant role in their child's mathematical learning. Parental involvement and a parent's role in changing attitudes toward mathematics are important. Parents need to take a proactive role in the education of their children.

One of the best ways to help someone overcome mathematics anxiety is through positive reinforcement of the child's intelligence and skills. Instead of giving a student negative criticism for doing poorly on a test or assignment, review with them the problems and skills they were able to master.

Parents are the most influential person in child's life so the things they say and do will have a greater impact than what is said by child's friends and even by their teachers. Parent's attitude, support and encouragement is what will impact them the most. Parents can help a child overcome mathematics anxiety by offering reassurance, practical assistance, and by making it fun. Most of all, they can set the tone by developing a positive attitude toward mathematics themselves, and trying to find a way to use numbers as much as they can with their child in everyday life. Here are some ways parents can help their child avoid stress about mathematics.

One of the best things parents can do as to help child develop mathematical skills and learn other academic and life lessons is to assure him that mistakes are something that will happen and that they are learning opportunities. If parents can help their children put mathematical mistakes into perspective and remind him that they are what will ultimately help him learn, and then child will be less likely to develop anxiety about mathematics.

V. Suggestions/ Recommendations

Math anxiety and low self-efficacy create faltering blocks in math education. Teachers must learn how to effectively ease these problems using the most current research and best practices. Parents must first understand that mathematics anxiety can occur. For that a proper mechanism to be developed so that teachers can communicate and enlighten parents. It is essential as majority of the parents (mainly in rural areas) are less educated and consider mathematics as extraordinary subject meant only for extraordinary students. Allow child to solve a problem in more than one way. Let them feel comfortable with what they are doing and learning. It is observed that many teachers pressurize students to solve exercises in the way it is presented in the text book. It discourages the students who adopt alternative methods and tries to experiment. So, a note may be given at the end of each chapter of the text books encouraging students to think of alternative methods. Teach child the basics of mathematics. Be more concerned with the process of doing mathematics rather than getting the correct answer.

Allow time for questioning and time for listening. Be sure each concept is understood before continuing. If a concept is missed, the concepts that build on it will be meaningless. Mathematics must make sense to child. Let children express their feelings and understandings of mathematical concepts. Help them learn how to evaluate their own learning. In order to minimize students' worries, struggles and anxiety with mathematics, it is necessary that mathematics is taught and learnt with fun. Right to education act (RTE) mandates an optimal student teacher ratio of 30:1 for all Indian Schools. According to the 2009-10 survey by District Information System on Education (DISE), the current average student teacher ratio for primary schools in India is 32:1.

To say, not so bad. In fact this number of has been improving over the years starting with 47:1 in 1995 to 40:1 in 2000 and 34:1 in 2008. China had an average student teacher ratio of 18:1 in 2008 for its primary school students. Further, if we compare with developed countries France and Sweden, we will find that the student teacher ratio in primary schools is close to 10. As per scheme of studies and programme for the Upper Primary stage by State Council for Educational Research and Training (SCERT) weightage of time in Mathematics is 166 Periods (40 minutes each)which is less than less than19 minutes per day. SCERT gave due weightage to Mathematics by providing 15% of the total allotted periods. But if we look for the actual fact, it is observed that less than 19 minutes per day are there for the whole class provided there is no additional holiday in an academic session. In other words, it can be said that each child gets less than one minute per day from his/her mathematics teacher. Considering the fact that most of the parents are economically weak as well as having lesser mathematical background the situation becomes worse. Locally conducted seminars on regular basis to understand the feelings of students, parents/guardians may help in improving the situation. Crude methods of evaluation and assessment are the basic reason of students detachment from the subject. Examiners must not involve themselves in mistake finding mission. This situation can be changed mainly by the teachers in their individual schools. So, actual teachers training at local level involving the teachers of higher learning institution of the region on regular basis may develop the situation. Thus mechanism should be developed to involve the college/higher secondary teachers of mathematics in confidence building of the children as well as their parents. A letter of acclamation to mathematics teachers and awarding them mainly in rural areas that have performed well may create a better competition amongst the teachers and encourage them to experiment.

VI. Conclusion

Mathematics anxiety is a frequently encountered condition in all levels of education. Early identification of mathematics anxiety is most important for the future mathematics learning of the individual. Understanding its cause and finding ways to avoid or reduce mathematics anxiety is crucial for successful mathematical learning in children. Mathematics anxiety is very real and occurs among thousands of people. Much of this anxiety happens in the classroom due to the lack of consideration of different learning styles of students. Today, the needs of society require a greater need for mathematics. Mathematics must be looked upon in a positive light to reduce math anxiety. Therefore, teachers must re-examine traditional teaching methods which often do not match students learning styles and skills needed in society and educate the parents about their Childs ability . Lessons must be presented in a variety of ways.. As a result once young children see math as fun, they will enjoy it, and, the joy of mathematics could remain with them throughout the rest of their lives. Guidance and counseling program must be arranged in the schools for teachers, students and parents from time to time. It is suggested that future research focus on how math anxiety relates to achievement.

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