Math Anxiety

Math anxiety is a problem that most people experience. It is a dread of mathematics that can interfere with manipulating numbers and solving mathematical problems within a variety of everyday life and academic situations. In reading the 2 articles, “Equity for All Students in the New Millennium: Disabling Math Anxiety” by Joseph Furner and Mary Lou Duffy and “Telling Math: Origins of Math Aversion and Anxiety” by Susan Stodolsky, one learns what causes math anxiety, how to prevent it, and how it has become accepted in society.

The article “Equity for All Students in the New Millennium: Disabling Math Anxiety” gave several statistics about math anxiety and discussed the causes and solutions of math anxiety. Some interesting statistics given are that only 7 percent of Americans have had positive experiences with math from kindergarten to college and two thirds of American adults fear or loathe math. Teachers and parents who have disliked math may pass on their discomfort to their children and students. Teachers can have covert or overt behaviors as they are teaching math that causes math anxiety in their students. Some of these behaviors are being hostile, exhibiting gender bias, having an uncaring attitude, expressing anger, having unrealistic expectations, and embarrassing students in front of peers. Math anxiety can also be brought on by communication problems, poor quality of instruction, evaluation methods, or simply by the difficulty of the material. When teachers teach straight from the book, problem by problem, and insist
that there is only one correct way to answer the problem, students feel confined and develop math anxiety.

This article also gave several good recommendations for preventing math anxiety. Teachers, in every subject, should always accommodate for different learning styles and create a variety of testing environments. They should always make the environment positive and allow for social approaches to learning mathematics. Students need to know that everyone makes mistakes in mathematics. Math should be made relevant to the students. The students should have some input into their own evaluations. A concept that teachers can teach students to help them solve math problems is self-talk. Students talk to themselves through math problems to help them discover ways to solve the problems. Students can ask themselves “What am I supposed to do first?” or make them feel positive by saying “I am doing my best.” The best teaching of math includes using manipulatives, calculators, computers, cooperative group work, discussion, questioning and making conjectures, justification of thinking, writing in math for thinking, expressing feelings, and solving problems, and problem solving approaches to instruction. Teachers should make the content integration a part of instruction and the assessments a part of instruction.

Students also need to make an effort to reduce math anxiety. They can learn to recognize when the panic starts by when they go blank, get nervous, or have sweaty palms. After they know they have become anxious about the problem, they can then use coping techniques. Other activities students can do to reduce their anxiety is to discuss or write their feelings about math, recognize what type of information needs to be learned,
be an active learner by creating problem-solving techniques, evaluate their own learning, and develop calming ways to deal with anxiety.

The next article, “Telling Math: Origins of Math Aversion and Anxiety,” provided many insightful ways to look at math anxiety and the social acceptance of not being able to do math well. The author of this article did a study on the difference between how math and social sciences are taught. Math is taught most often with teacher explanation followed by student practice. Looking at statistics in a study of 17,000 students, as age increases there is a decrease in liking math. 9 year olds ranked math as their best liked subject, 13 year olds ranked it as their second best, and 17 year olds ranked math as their least liked subject. The teaching of mathematics provides students with restricted routes to learning; but, this is not so in other subjects. Most teachers usually use lecture and seatwork centered around the textbook to teach mathematics. Students in most math classes are passive, usually just listening and watching their teacher do mathematics. This leads students to believe that math concepts and skills are learned from the teacher and then practiced. Resources, such as manipulatives, peer work groups, and textbooks, are not available to students or simply not thought of as useful by the students. High school students have given up on math and do not expect the textbooks to be helpful. In the author’s study, they noticed that teachers left out problems, mostly those that were word problems. Manipulatives were only used in 5 out of 20 of the classrooms and those that were being used were mainly rulers or other measuring devices. The teachers did not have their students participating in cooperative group work or tutoring. Peer work groups were infrequent and were usually games and contests when they did occur.
A major issue, that was brought to my attention in this article, is the acceptance of the idea that math is an area for which one either does or does not have talent. As the author states, you would never hear someone say, “I just couldn’t learn to read” because the idea that you are not good at math is readily accepted among adults, but distinctions like this are not made in reading, English, or social studies. These thoughts may be brought on by the dependence created between the math teacher and math learner over many years. Students begin to believe that the teacher is their only learning resource. If they do not understand the instruction provided by the teacher, they are stumped. If you are stumped and it is culturally acceptable, you excuse your math by declaring yourself “not good at math.” The author believes, that based on her study, it is very likely to have a poor teacher. If you do have a poor teacher, or need additional channels or time for learning, they typical math learning situation cannot respond.

From my reading, I learned what math anxiety is and how to prevent it, but that most math teachers are not responding to students extra needs in math class. The non-instructional character of math texts, the lack of concrete and manipulative experiences, the lack of social support, and the exclusive reliance on teacher presentation, conspire to divide math learners. Some people get it and are good at it, others don’t and believe they have no recourse. This is a problem that has created math anxiety in students that gets worse as they age. Since math anxiety is apparently present in most adults, it has become acceptable that people just aren’t good at math. This concept needs to change and one solution may be for teachers to work on lowering math anxiety.