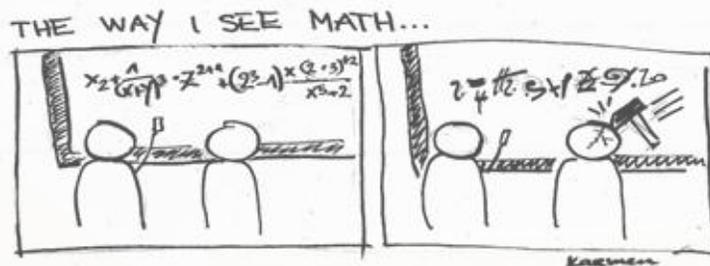


Math Anxiety in Teachers

By: Monica Wang & Sinthuja Parameswaran

What is Math Anxiety?

- ✓ Math anxiety is characterized by a strong dislike for math, feeling that math cannot make sense and lack of control over one's learning. (Ramirez et al, 2016).
- ✓ Math anxiety causes emotional, physiological and cognitive responses (Young, Wu & Menon, 2012).
- ✓ Math anxiety hinders an individual's ability to succeed in math related tasks, resulting in avoidance (Ramirez et al, 2016).
- ✓ Math anxiety's effect on learning can be regarded as one variable within an ensemble of environmental- related and person- related variables that interact together (Luttenberger, Wimmer & Paecheter, 2018).



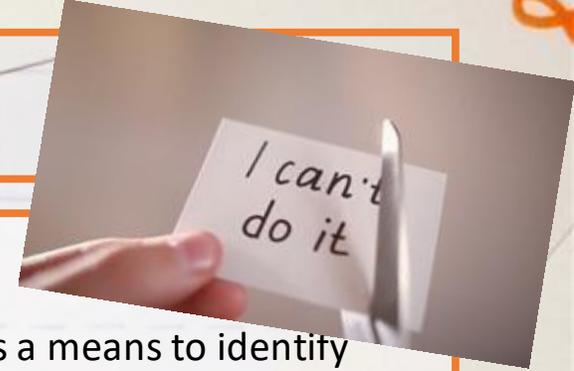
How Math Anxiety affects Students?

- ✓ Math anxiety is found in students as early as in the primary grades.
- ✓ Math anxiety interferes with working memory (Ramirez et al, 2013).
- ✓ Math anxiety lowers math achievements (Ramirez et al, 2013).
- ✓ Students who exhibit persistent problems learning math during their education usually bring these challenges and preconceptions into their adulthood and professional life.

How Math Anxiety affects Teachers?

- ✓ Math anxiety has been identified as an international concern for elementary school teachers. (Luttenberger, Wimmer & Paecheter, 2018).
- ✓ A teacher's own negative math experience can critically affect their teaching performance.
- ✓ Math anxiety in female elementary school teachers tend to negatively influence students, particularly female students (Beilock et al, 2010).

Reducing Math Anxiety in Teachers



Consequences of Math Anxiety in Teachers

- ✓ Teachers may produce, increase or reduce math anxiety among their students through their attitude, various teaching strategies and instructional practices (Sidiqi, 2017).
- ✓ Student belief and their perceived mathematic self- efficacy to learning often reflects the teachers' own perceptions (Beilock et al, 2010).
- ✓ Math anxious teachers rely on traditional methods, rather than progressive method of teaching that focuses on conceptual understanding of math (Raschka & Hemphill, 2012).
- ✓ Teachers' knowledge of the content determines the quality of math teaching and teachers' abilities to use instructional materials that are responsive towards students' needs (Adeyemi, 2015).

Some Misconceptions/ Myths about Math (Pearson, 2019).

- ✓ Men are better in math than women.
- ✓ There is a "best" or "correct" way to complete math problems.
- ✓ You have to have a mathematical mind to understand math.
- ✓ Math is boring.

Strategies

- ✓ Cognitive Behavioural Therapy as a means to identify underlying causes for for math anxiety (CAHM, 2019).
- ✓ Curricular, instructional and non- instructional strategies to minimize math anxiety levels (Sidiqi, 2017).
- ✓ Improving spatial abilities, experiences and cognition to alleviate math anxiety (Novak & Tassell, 2017).
- ✓ Using Narrative & Mind- Set Intervention as self- reflection to help teachers re-adjust their mindset to reduce math anxiety (Ramirez, Shaw & Maloney, 2018).
- ✓ Developing teacher self- efficacy and exercising a growth mindset (Sokolowski & Hawes, 2018).

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