Understanding Mathematics Anxiety: Investigating the Experiences of UK Primary and Secondary School Students

By Carey, E., Devine, A., Hill, F., Dowker, A., McLellan, R., & Szucs, D.

While mathematics is often considered a hard subject, not all difficulties with the subject result from cognitive difficulties. Many children and adults experience feelings of anxiety, apprehension, tension or discomfort when confronted by a math problem. Research conducted by the Centre for Neuroscience in Education at the University of Cambridge examined the math performance of more than 2,700 elementary and middle students in the UK and Italy who were screened for math anxiety and general anxiety. Researchers then worked one-to-one with the children in order to gain deeper understanding of their cognitive abilities and feelings towards math using a series of cognitive tasks, questionnaires, and interviews.

Emma Carey and colleagues found that:

- A general feeling that math was more difficult than other subjects often contributed to feelings of anxiety about the subject, and teachers and parents may inadvertently play a role.
- Girls in both primary and secondary school were found to have higher levels of both math anxiety and general anxiety.
- Students indicated poor test results, or negative comparisons to peers or siblings, as reasons for feeling anxious.
- Secondary school students also indicated that the transition from primary to secondary school was a cause of math anxiety, as the work seemed harder and there was greater pressure on tests and increased homework.

The report sets out a series of recommendations, including:

- Teachers should be aware that math anxiety can affect students’ math performance.
- Teachers and parents need to be aware that their own math anxiety might influence students’ math anxiety.
• Teachers and parents also need to be aware that gendered stereotypes about math ability might contribute to the gender gap in math performance.

Reducing classroom pressure and using methods like free writing about emotions before a test could help to alleviate math anxiety.

*Source: Centre for Neuroscience in Education, University of Cambridge, 2019.*