

Quantitative Study

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“I hereby declare upon my word of honor that I have neither given nor received unauthorized help on this work.”

Deidre Norman

Reference

Smith, C. J. (2016). *The effects of math anxiety and low self-efficacy on students' attitudes and interest in stem* (Unpublished doctoral dissertation). University of Southern California, California.

Summary

This quantitative study takes place in three urban middle schools in California with five hundred students. Its main focus was to understand the relationship between math anxiety and students' interests in STEM pathways. During their science class time, students received surveys created by Survey Monkey. These surveys were the Wigfield and Meece Math Anxiety Questionnaire (MAQ), the Bursal and Paznokas Revised Math Anxiety Rating Survey (R-MANX), and STEM Career Interest Survey (CIS). Students either completed it or turned it in, meaning they did not wish to participate. Afterwards, researchers collected the data and identified students with and without math anxiety. With three categories of math anxiety, ranging from low, mild, and high, an ANOVA test determined the variance and differences between the groups' levels. Overall, the study shows that though there exists an effort to invest in STEM education, many students' anxiety restricts their interest. This anxiety in math is also influenced by gender and grade level. It shows that anxiety increases from sixth to eighth grade and that females possess higher levels of math anxiety than males.

Implications

This study showcases the interest in STEM pathways as diminishing in middle school. Many

campaigns attempt to reassure children, especially adolescent girls, to go into STEM fields. Nevertheless, this campaign does not appear to work, as anxiety over not doing well attaches to a student's self-confidence. With this, teachers need to emphasize that mistakes help students grow without teaching students to learn from these mistakes. In mathematics, a mistaken answer can result in a low grade, which can result in a student giving up. A reassuring lecture about mistakes will not work, especially if this is reoccurring or they tried extremely hard on this test and still did poorly.