

Instruments for measuring Mathematical Anxiety in the last 10 years: what we know and what we can do.

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Oral presentation

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Abstract

Math Anxiety affects students' academic performance and emotional well-being. In recent years, there has been an increase in interest in understanding and addressing this issue, which has led to the development of a wide variety of measurement scales. However, this diversity of instruments has generated a series of challenges for education and psychology professionals.

The objective of this systematic review is to analyze the diversity of scales used in the last decade to measure Mathematical Anxiety to understand the heterogeneity in terms of the conceptualization of the construct, as well as its applicability in different educational contexts, being necessary to study the aspects, elements and dimensions taken into account to define and evaluate Mathematical Anxiety in students.

The review (according to PRISMA) is carried out as follows: the inclusion and exclusion criteria are defined according to the PICO format, focusing on the target population (students with normative development of school age), as well as on the instruments for measuring Mathematical Anxiety that exist for this population. A screening process is then carried out to select the articles that best fit the information being sought.

Once the final articles have been selected, all the information that may be necessary at some point in the review is extracted from each of them, which will attend to the following classification: information on the publication of the article, information on the conceptualization of Mathematical Anxiety and information on its measurement, including in this category both the instrument used and the educational stage of the students and the age range of the sample, among others.

The results of the review, although they confirm the evolution of the instruments for measuring Mathematical Anxiety over the years in the form of concreteness, in each study, according to the population investigated, also pose challenges for professionals who work with students who experience difficulties with mathematics, such as the difficult choice of an appropriate scale for each particular case since its application requires prior knowledge of both of the case of the student and the instrument, or the lack of standardization in the measurement of Mathematical Anxiety, which makes it difficult to compare results between different studies and identify general patterns. This review revealed significant heterogeneity in the conceptualization and measurement of Mathematical Anxiety, underscoring the need for the development and validation of robust, standardized measures that are sensitive to the diverse experiences of students across different educational contexts, posing challenges for researchers and practitioners in achieving consistent and comparable assessments.

In conclusion, the proliferation of scales to measure Mathematical Anxiety, although they reflect a growing interest in its study, also poses important challenges for research and practice, making it necessary to achieve greater standardization in the measurement of the construct, as well as the development of guidelines and criteria for the selection of the appropriate scale in each case, or the creation of a generic scale (previous model) applicable to the target students without the need to attend to specific individual issues as existing scales do.

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