

## **MATHEMATICS ANXIETY: A PORTUGUESE STUDY IN HIGHER EDUCATION**

Vanda Santos<sup>1</sup>, Anabela Pereira<sup>1,2</sup>, Teresa Neto<sup>1,2</sup>

<sup>1</sup>CIDTFF – Research Centre on Didactics and Technology in the Education of Trainers, University of Aveiro, Portugal <sup>2</sup>Department of Education and Psychology, Portugal

*Anxiety is a present state at the students during their school path. Many of the educational failures relate not only to mathematics but also to personal difficulties in particular, at evaluation exams. Studies highlighting the importance of the anxiety (state and trait) at failure in school performance. This paper has a concern about mathematics anxiety, in higher education, because there are very few studies about this topic. The research instrument were answered by higher education students from different institutions in Portugal in the beginning of the academic year. The study results are being collected and conclusions are been working.*

### **METHOD AND MEASURES MATH ANXIETY**

Anxiety is a present state of the student during their path at school. This negative emotional reaction, which translates into low self-concept, capable of interfering with school performance, has implications for personal and academic success. For most students, school education is often judged as being unpleasant (Vollsted, 2009), causes a certain level of anxiety and students who experience higher levels of academic anxiety generally show affect academic performance (Owens, Stevenson, Hadwin, & Norgate, 2012). The purpose of this study is to respond to the research questions about which factors have more impact on their anxiety in mathematics area. What are the causes of mathematics anxiety in higher institutions' students?

To answer this research questions, was collected information to study, such as: Participants: The sample is students from different higher institutions in Portugal with mathematics in their curriculum. Procedures: The sMARS (Math Anxiety Rating Scale) instrument, Part I, was adapted from a Spanish research in this field (Núñez-Peña, Suárez-Pellicioni, Guilera, & Mercadé-Carranza, 2013) with some adaptations to the Portuguese reality. The instrument is composed into four groups, namely, academic variables, the sMARS, about mathematical motivation and STAI (State–Trait Anxiety Inventory). This tool (paper and online) was given to higher education students from different institutions in Portugal in the beginning of the academic year.

With this study, it is intended to answer the question raised and to verify if it confirms the same results obtained in the study of Núñez-Peña, Suárez-Pellicioni, Guilera and Mercadé-Carranza (2013).

The present study provides an instrument for measuring math anxiety that may be a useful tool for educators and psychologists interested in identifying students that may have a low math achievement because of anxiety.

### **References**

- Núñez-Peña, M. I., Suárez-Pellicioni, M., Guilera, G., & Mercadé-Carranza, C. (2013). A Spanish version of the short Mathematics Anxiety Rating Scale (sMARS). *Learning and Individual Differences*, 24, 204-210.
- Owens, M., Stevenson, J., Hadwin, J. A., & Norgate, R. (2012). Anxiety and depression in academic performance: An exploration of the mediating factors of worry and working memory. *School Psychology International*, 33(4), 433-449.
- Vollstedt, M. (2009). „After I do more exercise I won't feel scared anymore”: An example of personal meaning from Hong Kong. In *European Research in Mathematics Education VI. Proceedings of the Sixth Congress of the European Society for Research in Mathematics Education. January 28th-February 1st* (pp. 131-140)