Production of didactic material for visually impaired in mathematics teaching

Bárbara de Cássia Xavier Cassins AGUIAR¹, Giancarlo de França AGUIAR², Andrea Faria ANDRADE³, Quelen Silveira CODEN⁴

(1) Graphic Expression Department, Federal University of Parana, Curitiba, Brazil babi.eg@ufpr.br

Orcid: 0000-0001-8003-7329

(2) Department of Mathematics, Federal Institute of Parana, Curitiba, Brazil.

giancarlo.aguiar@ifpr.edu.br

Orcid: 0000-0002-9225-3149

(3) Graphic Expression Department, Federal University of Parana , Curitiba, Brazil andreafaria@ufpr.br

(4) Dom Pedro II State School, Curitiba, Brazil

quelencoden@yahoo.com.br

Abstract

The inclusion of students with visual impairment in regular education has been widely discussed, so the production of teaching materials becomes a factor of extreme importance for the teaching/learning process. This work presents the first stage of a research project of the Federal University of Paraná, which aims to produce didactical material through theoretical research, observation and on-site testing, using three - dimensional modelling and rapid prototyping focused at the teaching-learning process that enables visually impaired students the access to Mathematics subjects. After some studies and observations, a mathematical domino game was developed based on the universal design for the study of fractions. Through this research, we can verify that the use of didactic materials in Mathematics classes can contribute to the teaching and learning of students with visual impairment. The initial results show that the developed game can be used successfully, assisting visually impaired students.

Keywords: teaching/learning, didactic material, inclusion, visual impairment.