Conversões entre representações dos números racionais: análise de aspectos matemáticos e cognitivos com uso de material manipulável [

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text (article)

Analítica

The present article brings a cut of a research entitled "Conversions between representations of rational numbers: limits and possibilities in the use of manipulative", developed in Graduate Program in Mathematical and Technological Education, Federal University of Pernambuco (EDUMATEC-UFPE), whose objective was to investigate, in light of Theory of Registers of Semiotic Representations, limits and possibilities in the use of manipulative in conversions between representations of rational numbers. The methodology used carried out a pilot experiment, with four manipulative, from which the Adapted Golden Bead Material was chosen for the deepening of the analysis and the conclusion of the research. In this section, we discussed the mathematical and cognitive aspects of the results obtained, considering the increase in the students' success rate with the use of the manipulative in the resolution of the conversions and the prevalence of the coding rule associated with the adapted golden bead material in the successful resolution paths. The study indicated that the use of the manipulative offered an initial resolving path and allowed the students to be able to answer most of the questions correctly. The results showed that the introduction of the adapted golden bead material and, consequently, of the associated coding rule, in the conversions between representations of the rational number, generated a success from the mathematical point of view and opened the opportunity for further investigations on possible advances also from the cognitive point of view

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