A TEACHING EXPERIMENT ON HOW CHILDREN UNDERSTAND THE MEANING OF ½ FRACTION.

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Our purpose of this paper is to describe a teaching experiment conducted in an "early childhood mathematics classroom" about teaching fractional-related concepts. The paper describes the responses of 16 children of four and five years old to a problem requiring the sharing of a square pattern. Data analysis is focused on the material and its properties and on the situations created by experimenting with it in order to enhance children's knowledge about fractions.

Fraction learning is a major obstacle for children. It seems to be a very complicated issue in the teaching and learning mathematics. Despite the wide range of research reports many issues are still to be answered.

While a certain number of researches dealt with the epistemological nature of fractions, most researches focused on the material elaboration and the methods used. Most of these approaches tried to teach fractions either with partitioning of continuous and discrete quantities or with subdivision of sets, length, area and volume (Miller, 1984, Davis et al, 1993). Regarding to early childhood education, there is limited research on children's knowledge about fractions (Hunting and Davis, 1991). The material used in these approaches refers to sharing of discrete and continuous quantities.

In our teaching experiment the task was designed to establish a conceptual field for the ½ fraction. The task, which seemed to be a powerful and challenging activity, is the one we call "Fill in the square". Four different material sets were used to "Fill in the square". The uneven material (6 triangles 1 square) using during the episode resulted to be the most effective in generating the notion of the half fraction and the patterns' equivalence among different shapes of the material.

Results support the conclusion that where some fractional knowledge exists, the use of well-organized and challenging activities can promote and develop children's previous knowledge.

References

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