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EXPLORING PATTERNS AND ALGEBRAIC THINKING

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Mathematics isn't only symbolic manipulation according to a set of archaic rules, but the understanding of patterns (Devlin, 1998). The passage from arithmetic to algebra is one of the major difficulties that students face and teachers should diversify strategies in order to allow their students to develop algebraic thinking and the sense of symbol (Arcavi, 2006). According to Orton and Orton (1999) patterns are one of the possible paths when thinking of presenting algebra and, consequently, improving algebraic thinking. The definable goal of this research lead to the understanding of the use of patterns in class, in a context of investigation tasks, in order to develop algebraic thought. One of the attempts of dealing with this set of problems has been done within four research prompts: 1) the image of Mathematics; 2) mathematical connections; 3) the understanding of Algebra; 4) mathematical communication.

The present study was done taking as a starting point a 8th grade class, using a qualitative and interpretive methodology, based on case studies. The researcher is both instrument and participant-observer. Questionnaires, interviews, direct class observation and written reports provided the necessary data.

The final results show that the use of patterns as a base and stimulus, in a context of investigation tasks, may contribute to the ultimate understanding of Algebra, granting the improvement of algebraic thinking or, specifically, the sense of the symbol by defying students to use different representations, to identify and generalize relations and to analyse its meanings. Furthermore, it also lays mathematical connections, enhances mathematical communication by means of developing their ability to use non-ambiguous and adequate language, written or spoken, and sets up a revised image of Mathematics for students.

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LEARNING MATH
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Maria Elisabete Bri

UNIBA

This study is part of an
teachers – who will teac
As a premise we understand that thinking through
though it is different from the child process, will inte
their future classes. This premise is based on an educ
and teaching process are understood as connected and in

How do children learn? How do I know they learn? I
knowledge to solve math problems? Several natio
government agencies have been reveled children insu
the end of primary school (SARESP, 2007; SAEB
currently on Brazilian educators debate. They believ
mistaken pedagogical practice, so that as a conseq
might be related to teacher education.

According to Adler and Jaworski (2004) is essenti
conceptions that support math teachers practice and
actions and teacher/students learning. This inve
methodology and was applied with 64 students in the
Service University Course to Primary Teachers. A
conceptions and believes about future teachers' math

The analysis revealed some conceptions categorie
(Classification Hiérarchique Implicative et Cohésiti
registers, some ambiguous conceptions were identifie
presentation in details.

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