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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References


LEARNING MATH FUT
Maria Elisabette Bire
UNIBAN

This study is part of an teachers – who will teach
As a premise we understand that thinking through... thought it is different from the child process, will influence their future classes. This premise is based on an educational process are understood as connected and influential.

How do children learn? How do I know they learn? I... knowledge to solve math problems? Several national... educators debate. They believe in the role of pedagogical practice, so that as a consequence it might be related to teacher education.

According to Adler and Jaworski (2004) is essential for... conceptions that support math teachers practice and shape teacher/students learning. This investigation's methodology and was applied with 64 students in the Service University Course to Primary Teachers. A new conception and believes about future teachers' math learning.

The analysis revealed some conceptions categorically: Classification Hierarchical Implicative and Cohesive, some ambiguous conceptions were identified in the presented in details.

References
Adler, J. & Jaworski, B. (2004) The state of research in... and how it needs to develop. ICMME 10 – Plenary.


