

Argumentation in the context of a didactic sequence in elementary algebra

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A growing number of researchers accept the view that the teaching-learning process is about the development of some shared understanding that comes out through discourse (Leitão, 2000; Douek & Scali, 2000; Steinbring, 2000; Yackel, 2001). The aim of the present work is to contribute to the discussion about the interest of discursive-argumentative activities for the conceptual development in mathematics. The analysis of an excerpt from a teacher-led argumentation will illustrate an analytical procedure designed to capture the process of knowledge updating through argumentation. This analytical procedure is based upon the analysis of three types of discursive actions: *pragmatic actions*, concerning the offer of necessary psycho-social conditions to the emergence of *divergence* among pupils, as well as the encouragement of debate as the way to negotiate divergence and attain a consensus; *argumentative actions*, concerning the presentation of opinions / points of view, with their respective *justifications*, as well as the consideration of opposite arguments; and *epistemic actions*, referring to certain forms of reasoning and informational topics specific to an epistemic domain, like mathematics. Starting from these views, we analyze a fragment of a didactic sequence for the early introduction to algebra among 7-8 year-old Brazilian students (Da Rocha Falcão, Brito Lima, Araújo, Lins Lessa & Osório, 2000). This analysis seeks to demonstrate that this fragment of didactic sequence can be characterized as a process mainly oriented to formulation and justification of points of view, the counter-argumentation being present in only one utterance of the teacher. A possible general conclusion allowed by the analysis above is that the argumentative process remains *partly* implemented in the discursive fragment of didactic sequence that is reported here. This is a relevant aspect for research concerning didactic and conceptual development in mathematics.

References

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