Eriksson, I., Fred, J., Nordin, A.-K., Nyman, M. & Wettergren, S. (2021). Tasks, tools, and mediated actions – promoting collective theoretical work on algebraic expressions. *Nordic Studies in Mathematics Education*, 26 (3-4), 29–52.

Abstract

The aim of this article is to exemplify and discuss what teachers using learning activity need to consider when planning and supporting students' collective theoretical work on algebraic expressions. Data are from two iteratively developed research lessons in two grade 7 classes. The analysis focuses on students' tool-mediated actions, the mathematical content processed, how the content is dealt with, and on identifying the crucial aspects that enable collective theoretical work. The result provides examples of how the content of the task, its design, and its tools, as well as the teacher's and students' tool-mediated actions are crucial factors in the promotion of collective theoretical work.

Inger Eriksson

Inger Eriksson, professor in education at Stockholm University. Her research interest is the development of students' algebraic and chemistry thinking. She is also interested in instructional design from a learning activity theoretical perspective in collaboration with teachers.

Jenny Fred

Jenny Fred holds a degree of Licentiate in the didactics of mathematics, works at Stockholm University and is a doctoral student at the research school RelMaS. Her research interest concerns mainly algebraic thinking in the early grades.

Anna-Karin Nordin

Anna-Karin Nordin holds a degree of Licentiate in the didactics of mathematics, works at Stockholm University and is a doctoral student at the research school RelMaS. Her research interest is mathematical arguments created in whole-class discussions.

Martin Nyman

Martin Nyman holds a degree of Licentiate in mathematics education and is currently engaged in the interface between education theory and teaching practice, and how it can be balanced in compulsory education.

Sanna Wettergren

Sanna Wettergren holds a degree of Licentiate in didactics and is a doctoral student in education at Åbo Akademi University. Her research interest is mainly early algebra and how to promote and enhance young students' algebraic thinking.