

Incorporating mathematical discussions into classroom practice by in-service teachers

Maria Samborska

The School of Education of the Polish-American Freedom Foundation and the University of Warsaw; Pedagogical University of Cracow

1. Background

In the last decades one can observe an international tendency in mathematics education to shift the main attention from proficiency in procedures and algorithms towards an understanding of mathematics. In Poland, as in many other countries, mathematics teachers are obliged by national core curriculum to focus on students' thinking, reasoning and justifying. Engaging students in creative mathematical processes, such as mathematical discussions, is well documented as a powerful tool for developing conceptual understanding and reasoning. However, education research conducted in the recent years showed that most Polish mathematics teachers still use the traditional model of knowledge transmission.

2. Aim

The study was designed to try and assess an attempt to change the traditional model of teaching by incorporating mathematical discussions into classroom practice.

3. Method

Five-weeks personal development course for mathematics teachers from elementary and secondary schools, focused on orchestrating mathematical discussions, was design and conducted. A key feature of the course was using scripting and rehearsals as a decomposition and approximation of practice.

4. Results

Each week participants did a homework concentrated on one aspect of leading classroom discussions. Teachers' work: scripts and dialogs performed during rehearsals were collected and analyzed.

5. Conclusions

Decomposition and approximation of practice were helpful in enriching or incorporating presented way of using classroom talk and, as an effect, in concentrating more on students' thinking and reasoning.