Abstract - Kalina Jastrzębowska

Dialogue – In Search of a Teaching / Learning Model in Early Childhood Mathematics Education

The role of the *sensitive* teacher is to sense a child's possibilities; to look ahead in thought to provide the child with further learning encounters; to be involved in creating and locating meanings in culturally appropriate contexts for the child; to be alert to the child's needs; to attempt to understand the child's way of seeing; to continually reflect on steps taken; to research in action.

Main Research Question: How can dialogue-based teaching and the use of open-ended tasks in early childhood mathematics education foster the development of mathematical thinking?

Questions concerning the development of mathematical thinking and reasoning skills:

- What types of mathematical problems and ways of formulating them foster students' involvement in justifying solutions, debating, convincing others?

Questions regarding communication:

- What is the students' opinion about creating and solving open-ended mathematical tasks and cooperating in a group setting?

Questions about developing metacognitive skills:

- What types of questions facilitate students' abilities to engage in reflection about their own thought processes?

Questions about changing social norms:

- What changes in social norms can be observed through implementation of the proposed project within the school community?

Questions about changing sociomathematical norms:

- What changes in sociomathematical norms can be observed through the introduction of the proposed project within the school community?
- What teacher actions contribute to the occurrence of these changes?

Research Methodology: The study developed is embedded in the conventions of qualitative Design Research.

Design Research describes and evaluates what education could be. It translates the researcher's intentions and knowledge into an important practical domain, while developing theory. Its task is to develop and test theoretical assumptions, to design an innovative educational environment and to determine whether it has a chance of functioning and, if so, on what terms. The researcher-theorist plans actions to bring about a solution to the problem, then tests the ideas