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Harmonizing different kinds of mathematical thinking in mathematics education

Classroom observation and research show that many – if not the majority of – students, when asked to decide on the truthfulness or falsity of a statement, answer (correctly or not) right away, without taking the time for reflection or investigation. Often a single example at hand is, to them, a sufficient foundation for their decision and its justification. An important aim of the teaching of mathematics should be the development of correct thinking habits in situations where truth is sought. Neither learning algorithms nor mathematical proofs could fulfill it. School mathematics is a good playground for it, but it would demand de-emphasizing elaborated proofs and harmonizing all kinds of inference: empiric, intuitive, through analogy, and deductive.

In the lecture we will show examples of correct and incorrect students' evaluations of sentences and their justifications, both collected as a result of our observation and research, as well as found in the literature.

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