

Inductive reasoning of 10-12 year old children in mathematical environment

Formation of inductive inference is a complex process influenced by a number of diverse phenomena, whose study is at present moving to the spotlight of the community of psychologists. So far, conclusions of researches in this domain have been used in mathematical environment only very rarely, this despite the fact that inductive reasoning is crucial in many operations which are perceived as essential in development of mathematical reasoning.

In my thesis I summarized conclusions of the relevant research, mostly in the domain of psychology, and put them in context of other research in this field. I dissected phenomena described by other authors, then applied their consequences in mathematical environment and finally designed and carried out two experiments. The aim of the first was to explore the genesis of inductive inference in natural environment, with the focus on the conditions of its genesis. The aim of the other experiment was exploration of genesis of inductive inference in a stimulating environment, with the focus on the quantity of experience prerequisite for formation of inductive inference and on the relation between the quantity of the experience and confidence in the consequent inference.

The conclusions of the experiments clearly show the importance of the quantity of experience, of its order, of the context and motivation for the genesis of inductive inference in mathematical environment. They also contribute to the existing state knowledge of relations between the quantity of experience and confidence in inductive inference.