

ABSTRACT

The topic of the thesis is the development of understanding of equality in pupils of the 2nd and 3rd year of primary schools. The thesis is based on research conducted within the project Teachers' Understanding of the Causes of School Failure and the Effectiveness of Educational Interventions, in which more than 600 pupils participated. Using the results of the aforementioned research, I will analyse the most common errors and the causes from which the errors may have developed. Thanks to the results from two didactic tests in mathematics in two consecutive years with the same pupils, I can observe where the perception of equality has shifted in one year.

My next goal will be to find out, by analyzing textbooks and hypothesizing about the mathematical notations used, whether my conjectures about the reasons for the incorrect solutions are correct.

Based on the results of the research, it seems that the choice of textbooks that students use to learn from has a significant impact on their understanding of equality. In order to test this hypothesis, I will conduct a detailed analysis of the textbooks of all publishers used for teaching in the researched classes. A mapping will be carried out of situations in which pupils encounter equations and other tasks that promote understanding of equality.

The second hypothesis deals with the chaining of numerical operations in ordinary calculations and tests how this method of notation affects the perception of equality. To test it, I will use a compound word problem, which I will give to students and then work on solving. I will interview teachers in these classes about their perceptions of such notations.

In the last part of the thesis, I will interview students who solve the same equations as the students in the project. I will find out from the pupils immediately after they have worked out the equations what solution strategies they use and how they perceive the equation notations.