Research of mathematical reaction time of schoolchildren for improving mathematical education

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The different abilities for learning mathematics should be detected on simple mathematical problems such as arithmetical operations. One can conjecture that the average time necessary to solve simple problems of fixed type and difficulty level can be used as a quick way of checking individual ability and performance. We define the mathematical reaction time as the statistical average of several problem solving times for similar problems. The mathematical reaction time can also be used to compare difficulty levels of different problems. Modern educational software allows to design tests and to measure the response time spent on solving the test problems.

We present results of our research on the mathematical reaction time of schoolchildren which is measured during specifically designed computerized tests.

Our results show that individual statistical differences of mathematical reaction times between schoolchildren correspond to their achievement levels in mathematics.

We discuss the possible improvements in mathematical education which follow from our research.