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Eyetracking as a new method for research on mathematics education

We will discuss new opportunities to run research on mathematics education from the neurodidactical point of view, specifically by using eyetracking method by presenting exemplary results of the research with the application of eyetracking to examine the strategies and difficulties junior and senior high school students, university students and experts in the process of problem solving activities.

We will present some illustrative advantages of using eye-tracking method over conventional tests and discuss the way of analyzing psychophysiological data, such as pupilometry, to examine the self assessment of the level of problems' difficulty and cognitive load during problem solving.

We will show how eyetracking methodology can provide us with additional information and insight not available by using any other methods into the subject of strategies used to analyze mathematical texts and solving mathematical problems and subjective assessment of given problem level of difficulty.

Keywords: eyetracking, pupilometry, mathematics education, problem solving