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STUDENTS' SOLVING OF MULTIPLE-CHOICE TASKS FOCUSED ON GRAPH SLOPE INTERPRETATION OBSERVED BY THE EYE-TRACKING METHOD

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We employed the eye-tracking method (Eyetracker by Tobii, 300 Hz) in order to observe students' strategies of choosing an option when they solved multiple-choice tasks focused on graph slope interpretation. Each student solved 7 multiple-choice tasks focused on graphs in kinematics. Most tasks were adopted from Beichner's TUG-K test (Beichner, 1994). Particularly, they were focused on position-time graphs and determining velocity from the graphs as it is stated in the Objective 1 of the Beichner's original test. Altogether 23 high school students participated in the study (8 women, 15 men). Each stem-text, stem-graph and each option was marked as a separate Area Of Interest for every task. We provide comparison of attention allocation between two students group: those, who solved a test task correctly and those who not. Based on the data analysis, we observed and described different students understanding of the graph slope concept. Moreover, we applied the cluster analysis in order to divide students into groups according to their attention spent on each option. We obtained very similar results as in the previous case.

Beichner, R. J. (1994). Testing student interpretation of kinematics graphs. *American Journal of Physics*, 62, 750–762.

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