

ZMATH 2011a.00763

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Tracing 10th and 11th graders approaches in function tasks.

Acta Didact. Univ. Comen., Math., No. 10, 51-67 (2010).

Summary: The aim of the study was to investigate: a) whether the instruction in Grade 10 (students 15-16 years old) impedes the learning concerning functions in Grade 11 (students 16-17 years old), b) the role of the various modes of representations and c) the role of algebraic and geometrical approach in solving function tasks. The study was conducted among 68 10th graders and 97 11th graders. In Grade 10 students solve tasks algebraically while 11th graders used both algebraic and geometrical approaches. However, the point-wise approach is still the dominated one. 10th graders responses indicate a compartmentalized way of thinking since they solved the tasks according to the mode of representation while 11th graders make an effort for de-compartmentalization. Findings also suggest that students' ability to solve conversion tasks is closely linked with their problem solving ability.

Classification: I23 C33 D23

Keywords: functions; algebraic approach; geometrical approach; representations; conversions; compartementalization; thinking; empirical investigations; grades 10-11; research