

Title: Using online tools to assign and assess the work of secondary school pupils in mathematics

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Abstract: Despite the long-term trend of technology implementation in mathematics education, there is not much research that would empirically and long-term monitor the impact of technology on pupils' knowledge. The presented three studies examine the potential benefits of using Khan Academy as a tool for assigning and assessing homework in mathematics at upper secondary schools. The studies deal with three groups of research questions. What is the attitude of pupils towards the Khan Academy implementation, and what benefit do they see in the online practice? Can pupils transfer acquired knowledge from Khan Academy to the school context? In addition to procedural knowledge, does Khan Academy develop a deeper understanding of the underlying concepts? At the time of the research, the author was the mathematics teacher of some of the participating pupils. Based on the results of these studies, the consequences and recommendations for teaching mathematics at upper secondary schools using online platforms are discussed at the end of the thesis.

Keywords: Khan Academy, pupils' attitudes, procedural knowledge, conceptual knowledge, Bloom's Taxonomy