Effects of variations in task design on mathematics teachers’ learning experiences: a case of a sorting task.

Summary: The goal of the study presented in this article was to examine how variations in task design may affect mathematics teachers’ learning experiences. The study focuses on sorting tasks, i.e., learning tasks that require grouping a given set of mathematical items, in as many ways as possible, according to different criteria suggested by the learners. We present an example of a sorting task for which the items to be grouped are related to basic concepts of analytical geometry that are connected to the notion of loci of points. Based on a design experiment of three iterations with practicing secondary school mathematics teachers, we report on intended and enacted objects of learning inherent in three versions of the task. Empirically based suggestions are drawn about design of sorting tasks that potentially evoke desirable learning experiences.

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