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Problem posing based on investigation activities by university students.

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Summary: This paper reports a classroom-based study involving investigation activities in a university numerical analysis course. The study aims to analyse students' mathematical processes and to understand how these activities provide opportunities for problem posing. The investigations were intended to stimulate students in asking questions, to trigger their thinking processes, to promote their ability to investigate and to support them in learning numerical analysis' concepts and procedures. The results show that the investigations provided opportunities for students to experience mathematical processes, including posing questions, formulating and testing conjectures and, to some extent, proving results. They also provide some understanding about the role of problem posing in these processes. Posing questions occurred mainly in an implicit way, in the interpretation of tasks and in identifying regularities, analysing graphs and testing cases. The conjectures were often based on pattern identification or data manipulation, and the students tended to accept them without testing or proving. The students also proposed alternative formulations for the initial questions and posed new problems from their explorations and attempts to refine previous conjectures.

Classification: D55 D45
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