



Teacher Education

Contributions to In-service Primary Teachers' Education from Their Engagement in Mathematics Landscapes of Investigation

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Abstract

In Mathematics Education research, studies have pointed out the existence of little attention in initial primary teacher education for the exploration of mathematical content from critical discussions aimed at its pedagogical use in understanding emerging social problems, such as social inequalities, climate and environmental changes, and violence (Gutstein, 2018). However, the treatment of these and other issues in mathematics classes has increasingly become a requirement of basic school curricula. As a consequence, many primary teachers, especially those at the beginning of their careers, do not feel prepared to work with these matters in mathematics classes, which leads them to seek subsequent teacher education.

Although this situation is known and remarked upon in the Mathematics Education literature, there are few studies specifically aimed at understanding how teachers learn and implement investigative tasks that allow for the treatment of social issues in their mathematics classes as a result of their engagement in in-service teacher education. In this way, using the perspective of Critical Mathematics Education, the objective of this research is to understand how primary school teachers working with landscapes of investigation develop from the study and elaboration of teaching tasks. Critical Mathematics Education is mostly concerned with the connection between mathematics education and issues such as equity, social justice, classroom dialogue, project development, and inclusion (Skovsmose, 2023). The development of landscapes of investigation has been a way to address these concerns in the classroom. Landscapes of investigation can be defined as learning environments that provide students with opportunities to build their own conclusions, accepting the invitation to analyse didactic situations and problems with the principles of investigation, exploration, questioning, and surveying of hypotheses and ideas (Skovsmose, 2023). Furthermore, they provide opportunities for dialogue, cooperation, research, and decision making. Ponte, Brocardo, and Oliveira (2015) have provided guidelines for teachers to conduct investigation tasks



in the field of mathematics education, and to build and adapt teaching activities, seeking to favour the learning of their students.

To achieve the objectives of this study, we use a case study methodology (Ponte, 2006) with a qualitative approach. We will analyse teacher engagement in a teacher education course aimed at Portuguese primary in-service teachers. In this teacher education course, developed in 75 hours with four stages, we will explore teachers' development of tasks based on the landscape of investigation in mathematics classes. Our study is in the initial implementation phase. We are currently working on the planning the course that will be carried out with teachers who work in primary schools from the Lisbon area, Portugal.

Keywords: primary teachers; teacher education; critical mathematics education

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