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Online collaborative mind mapping for mathematics teacher education

The inclusion of alternative and multimodal methods for online interaction and knowledge construction in mathematics teacher education is still an incipient field. In this paper, we present a multiple case study of three blended courses in an elementary mathematics teacher education program at Western University. In these blended courses, the online component included the construction of collaborative mind maps. Through constructivist grounded theory methods, we analyzed teacher candidates' mind maps as (a) final products, and (b) interaction processes. The resulting theory describes how pre-service mathematics teachers interact and construct knowledge while they engage in online collaborative mind mapping. The study provides insights into how collaborative and multimodal technologies affect mathematics teacher education, and in turn, how to improve its implementation.