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**Inquiry-Based Learning through Problem Posing:
An activity theory analysis of the impact on
mathematics pre-service teachers' lesson design**

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Abstract

This study investigates pre-service teachers' lesson plans as they support inquiry-based learning (IBL) lesson plans with problem posing activities. We view this activity through the lens of Activity Theory with the respect of contradictions and interpret data using qualitative content analysis. The data was generated from a workshop designed for pre-service teachers' mathematics course for grades 5-10. Prior to the workshop, most of the pre-service teachers did not use problem posing activities in their IBL lesson plans, but all of them used problem posing activities after the workshop. An innovative transformation of lesson plans was demonstrated in these findings. In this way, the pre-service teachers were more actively engaged in using problem posing to achieve the goals of the IBL approach. So, the activity theory led us to an opportunity for pre-service teachers to design IBL lesson plans with problem posing activities to encourage them to drive their students into inquiry.