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Zen and the art of *neriage*: facilitating consensus building in mathematics inquiry lessons through lesson study.

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Summary: One danger of integrating inquiry-based problem-solving activities into mathematics lessons is that different strategies could be accepted without in-depth discussions on the cogency and efficiency of the strategies. To overcome this issue, Japanese teachers typically go through a series of lesson-study-based teacher learning sessions and learn how to help students build consensus on the best mathematical strategy and think deeply about problem solving (*neriage* in Japanese). Assuming that this can also be an effective model in other cultural contexts, a video-based lesson study was conducted for a group of US teachers to effectively incorporate consensus building discussions in their mathematical inquiry lessons. Through the lesson study, the teachers learned to release control of class discussions to their students and help them discuss and examine different strategies. This article concludes with various aspects that the teachers learned for effectively implementing *neriage* in their lessons.

Classification: D50 C30 B50

Keywords: problem solving; problem solving strategies; lesson study; consensus building; inquiry lesson; proportional reasoning; teacher education

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