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School-based in-service mathematics teachers' professional development: designing diagnostic conjecturing activities.

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Summary: This chapter reports the professional learning of 21 in-service mathematics teachers (MTs), from two junior high schools participating, in the Lighten-Up School-Based Program (LUSBP). The MTs in both the schools chose mathematical conjecturing as the theme of professional development (PD); they also participated in the PD workshops on approaches for designing diagnostic conjecturing activities planned and implemented by the same mathematics teacher educator-researcher (MTE-R). The data were collected from the dialogs and textual materials of the participating MTs, MTE-R, and students. We analyzed these data from three dimensions: the teaching designs, teaching experimentations, and environments of professional development. The results indicated the MTs' changes included: be oriented to student-centered teaching approach, be more sensitive to students' learning, and established the school-based professional learning communities. According to the above results, we proposed suggestions to the plan and implementation of future professional development courses for in-service mathematics teachers.

Classification: B50 D49 D39

Keywords: diagnostic conjecturing; tasks designing; school-based teacher education; mathematics teacher; teacher professional development

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