

DESIGNING TEACHER PROFESSIONAL DEVELOPMENT FOR MATHEMATICS TEACHING WITH VARIATION THEORY

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Abstract

In this study, we aimed at demonstrating the power of Variation Theory in exploring the local situation of Indonesian teachers and Teacher Professional Development program. The projection of Variation theory regarding the enterprise of teaching results on the need of sensitivity of students and exemplary teaching strategy that differ with teachers teaching style. Besides, It requires more opportunities for teachers to understand the critical feature of object of learning. By sequence of activity that elaborating variation theory and regards the local situation might imply the improvement of students learning.

Keywords: Variation Theory, Teacher Professional Development, Indonesia

Abstrak

Makalah ini bertujuan untuk mendemonstrasikan penggunaan *Variation Theory* dalam mengeksplorasi situasi lokal dari guru Indonesia and program peningkatan profesional guru. Proyeksi dari *Variation Theory* dalam pengajaran menunjukkan kebutuhan akan sensitifitas terhadap siswa dan perlunya contoh strategi pengajaran yang berbeda untuk guru. Selain itu, guru membutuhkan kesempatan yang lebih untuk memahami *critical feature* dari *object of learning*. Dengan aktifitas yang mengelaborasi variation theory dan memperhatikan situasi lokal dapat menghasilkan peningkatan pembelajaran siswa.

Kata Kunci: *Variation Theory*, Peningkatan Profesional Guru, Indonesia

Students' achievement on international comparison study in Trends in International Mathematics and Science Study (TIMSS) and Teachers' competences necessary for mathematics teaching in Teacher Education and Development Study in Mathematics (TEDS-M) could be considered as benchmark for mathematics education reform, school and teaching effectiveness. The study of Schmidt, Houang & Cogan (2011) suggested that there was the strong connection between the knowledge of potential future teachers and students' achievement performed in TEDS-M and TIMSS respectively. These could be interpreted that the quality of teachers might influence the students' performance in Mathematics. Reflecting the TIMSS result data, Indonesia as a developing country in Southeast Asia had low score of mathematics achievement in TIMSS as well as in PISA. These heighten the sense of urgency of improving professional teaching. Many initiatives on Teacher Professional Development (TPD) program were made to support teacher to have reformation in mathematics achievement and increase students mathematics understanding in Indonesia. However, as in many cases, the current practice of Teacher Professional Development in Indonesia is in the form of top down TPD with predetermined subject, strategies, instructor and time table and isolated from the classroom reality