Mathematics Teachers' Pedagogical Strategies and Grade 7 Learners' Achievement: Basis for A Varied Pedagogy Teacher Training Plan

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Abstract

Mathematics achievement depends partly on how teachers organize instruction, engage learners, and support problem solving. This study examined the pedagogical strategies used in Mathematics 7 and their relationship with students' fourth-quarter achievement as basis for a proposed teacher training plan. The study used a descriptive-correlational design involving 12 Mathematics 7 teachers and 502 Grade 7 students. Data were gathered through a validated researcher-made questionnaire and documentary analysis of fourth-quarter grades. Means, standard deviations, Pearson correlation, and multiple regression were applied to describe variables and test relationships and predictive effects statistically. Teachers strongly employed collaborative learning, problem-based learning, metacognitive instruction, and inquiry-based learning, with overall means ranging from 3.47 to 3.55. Ninety-two-point eight percent of students passed Mathematics 7. However, using Pearson's r correlation, no strategy significantly correlated with achievement. The findings showed that teachers extensively used varied learner-centered pedagogies, yet these strategies did not significantly explain differences in Mathematics 7 achievement. Achievement may therefore depend on implementation quality and other learner, classroom, and school factors. A sustained teacher training plan emphasizing strategic integration, differentiation, assessment, and coaching was proposed. The school should implement the proposed teacher training plan emphasizing varied pedagogies, differentiated instruction, formative assessment, technology integration, and sustained coaching. Mathematics teachers should strengthen contextualized problem solving, structured collaboration, inquiry, and metacognitive reflection. Future studies should use larger samples and examine additional learner, teacher, classroom, and school-related factors.

Keywords: pedagogical strategies, problem-based learning, collaborative learning, inquiry-based learning, metacognitive instruction, mathematics achievement, teacher training plan