

Mathematics Teachers' Perceptions on Developing Students' Visualization in Mathematics

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Abstract

The purpose of this study was to assess mathematics teachers' perceptions on developing students' visualization in mathematics. The study used survey design with quantitative research method, and 183 teachers were selected using stratified random sampling based on sex, program, level of teaching, and year of service. Questionnaire was developed employing Likert scale in order to collect data which were analyzed using mean, standard deviation, independent t-test, and one and two way ANOVA. Outcomes suggested that the performance of mathematics teachers in developing students' visualization in mathematics, designing lessons and teaching concepts using visualization techniques, exposing students to practice visualization of mathematical concepts, and assessing students' on visualizing mathematical concepts was moderate. Besides, problems were observed in teaching mathematics using animation/simulation/video/computer application, experimentation and manipulatives. Teachers undergoing training for their second degree, teaching in preparatory-level schools and with longer years of service were not able to implement different types of mathematical visualization techniques. Based on the outcomes, such measures as providing necessary visualization materials, redesigning mathematics curriculum and textbooks, and training teachers were recommended to overcome the problem..

Key words: visualization, design, teaching, practice, assessment, mathematics

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