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In-service middle and high school mathematics teachers: Geometric reasoning stages and gender.

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Summary: The purpose of this current study was to investigate the reasoning stages of in-service middle and high school mathematics teachers in geometry. There was a total of 148 in-service middle and high school mathematics teachers involved in the study. The participants' geometric reasoning stages were determined through a multiple-choice geometry test. The independent samples t-test with $\alpha = 0.05$ was used in the analysis of the quantitative data. The study demonstrated that the in-service middle and high school mathematics teachers showed all the van Hiele levels, visualization, analysis, ordering, deduction, and rigor, and that there was no difference in terms of mean reasoning stage between in-service middle and high school mathematics teachers. Moreover, there was no gender difference found regarding the geometric thinking levels.

Classification: C39 C69 D69 G19

Keywords: educational diagnosis; subject content knowledge; teacher characteristics; mathematical ability; visualization; recognition; analysis; ordering; deduction; rigor; empirical investigations; research; gender differences; knowledge level; van Hiele theory; cognitive development; stages of development