

Effectiveness of GeoGebra in Developing Conceptual Understanding of Transformation Geometry Case of Grade 11 Students

Authors : Gebreegziabher Hailu Gebrecherkos

Abstract : This study examines the effectiveness of GeoGebra in developing the conceptual understanding of transformation geometry among Grade 11 students. Utilizing a quasi-experimental design, the research compares the learning outcomes of students who engaged with GeoGebra against those who received traditional instruction. Pre- and post-tests were administered to assess students' grasp of key transformation concepts, including translations, rotations, reflections, and dilations. Additionally, qualitative data were gathered through student interviews and classroom observations to explore their experiences and perceptions of using GeoGebra. Results indicate that students utilizing GeoGebra showed significantly greater improvement in their understanding of transformation geometry concepts. The interactive features of GeoGebra facilitated visualization and exploration, leading to enhanced engagement and deeper conceptual insights. The findings underscore the potential of GeoGebra as a powerful educational tool that not only fosters mathematical understanding but also accommodates diverse learning styles in the classroom. This study contributes valuable insights for educators seeking to improve the teaching and learning of transformation geometry in secondary education.

Keywords : calculus, conceptual understanding, GeoGebra, transformation geometry

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