

USE OF A GEOBOARD IN COMPUTING THE AREA AND PERIMETER OF GEOMETRIC SHAPES AMONG GRADE 7 LEARNERS AT NOVALICHES HIGH SCHOOL

ABSTRACT

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Mathematics is grounded in logic, quantity, and structure and is fundamental to many academic and real-world applications. Geometry contributes to spatial reasoning through the study of shapes, sizes, and spatial relationships. However, many learners experience difficulty computing area and perimeter. This study investigated geoboard-assisted instruction as an approach to improving Grade 7 learners' understanding of area and perimeter at Novaliches High School. The study used a quasi-experimental design involving 180 Grade 7 learners selected through cluster sampling from 330 learners across six sections. Validated pre-tests and post-tests measured changes in knowledge, while structured surveys identified persistent learning challenges. Geoboards were incorporated into instructional sessions between the pre-test and post-test. Sessions were conducted under controlled conditions to support consistency. Learners' mean post-test score ($M = 20.97$) was higher than their mean pre-test score ($M = 14.82$). A paired-samples t-test yielded $t = 21.29$ and $p = 0.00001$, indicating a statistically significant improvement after geoboard-assisted instruction. Survey responses nevertheless identified continuing difficulties involving geometric concepts, grid interpretation, and fraction-related computations. The findings support the instructional use of geoboards in teaching area and perimeter, particularly when accompanied by appropriate scaffolding and teacher facilitation. Continued use may be supported by targeted teacher training addressing common misconceptions. Research with broader samples and other mathematical topics may help assess the generalizability of these findings.

RECOMMENDED CITATION

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