

**APPLICATION OF AUTHENTIC ASSESSMENT IN JUNIOR  
SECONDARY SCHOOL MATHEMATICS IN SRI LANKA,  
AN ILLUSTRATIVE STUDY OF GRADE TEN  
SCALE DIAGRAMS**

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The purpose of this study is to explore the feasibility and effectiveness of adopting authentic instruction and assessment methods in the teaching learning process of mathematics in junior secondary schools. The study, focused on determining, how authentic instructional methods improve students' learning outcomes and the 21<sup>st</sup> century skills. This research was done under the three research questions: The effectiveness in achievement of learning outcomes; the achievement of higher order thinking skills and 21 century skills. This study also examine whether there is content loss in achievement due to authentic methods as most of the teachers' claim.

Two comparable groups of students were selected from grade 10 classes of the same school, as control group and treatment group. Each class had 35 students and a co-ed class. The same mathematics teacher was employed in both conventional and authentic teaching and assessment activities. The conventional instructional method was administered first to avoid confounding. The teacher was oriented to authentic instruction. Same instructional unit on scale diagram in grade 10 was selected for instruction with same amount of class periods. Both qualitative and quantitative approach was used in the collection of data. The results were significantly favoring the authentic instructional and assessment methods in students' achievements. The differences were significant at 0.01 levels in the achievement of higher order thinking skills. Similarly the three learning outcomes subjected to the study of two comparable groups were also significantly different at  $p < 0.05$  level.

The study revealed that, the authentic instruction and assessments bring a positive effect on higher order thinking abilities. Authentic approach provides ample opportunities to the students to develop the 21<sup>st</sup> century skills beside the mathematical knowledge and skills.

Keywords: Authentic assessment, Higher Order Thinking ability, 21<sup>st</sup> century skills.