



CLUSTER INNOVATION CENTRE
(UNIVERSITY OF DELHI)
M.Sc. (Mathematics Education)
A Joint Degree under the Meta University Concept by
University of Delhi & Jamia Millia Islamia



Analyzing Indian mathematics textbook in the light of Van Hiele model of geometric learning

(A research dissertation submitted at Cluster Innovation Centre, University of Delhi)

Abstract

Geometry plays a fundamental role in mathematics education, fostering spatial reasoning skills and promoting problem-solving abilities. This research study delves into the analysis of Indian mathematics textbooks, examining their effectiveness in teaching geometry through the lens of the Van Hiele model of geometric learning. The study aims to unravel the strengths and weaknesses of the textbooks. By evaluating the textbooks based on the Van Hiele model, this study sheds light on the extent to which geometric concepts are comprehensively covered and challenges students to think beyond mere visual representation. This research study employs a meticulous methodology to analyze Indian mathematics textbooks in the context of the Van Hiele model of geometric learning. The study follows a systematic and comprehensive approach to investigate the effectiveness of these textbooks in teaching geometry. The research design incorporates rubrics scoring and rating scale questionnaires to gather data from teachers, enabling a multi-faceted analysis of the textbooks. The results of the study emphasize how crucial it is to increase the interest and rigor of the geometry curriculum. Real-world examples, practical exercises, and problem-solving activities would help textbook readers grasp and apply geometric concepts more deeply while also piquing their interest. In order to address the deficiencies found, this research study suggests considerable changes to the Indian mathematics curriculum. The curriculum can better support students' geometric learning and prepare them for the practical application of geometry by adding concrete instances, emphasizing problem-solving, and raising the level of rigor. In order to improve the efficacy of geometry education in India, curriculum designers, teachers, and policymakers can benefit greatly from the study's conclusions.

by

Mansi Gundhrva

M.Sc. (Mathematics Education)

2021-2023