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A Critical Analysis of Large-Scale Math Assessments of Grade 4: Consequences for Development and Educational Optimisation

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ABSTRACT The aim of this work was to portray and compare the learning achievement of Grade 4 students in mathematics subjects for improvements in curriculum developments and improved practices. The research employed a norm-referenced assessment approach to compare performance trends across different populations and geographical areas by concentrating on relative outcomes. Data of 10,578 Grade 4 students from 633 schools was critically analysed. Findings revealed that students had lower scores in Statistics and Probability items across all content areas of mathematics. Additionally, the highest score was observed in each of the knowing and reasoning domains. Students' average score in the applying and reasoning domain suggests that although students may comprehend mathematical concepts, they have difficulty applying them to solve problems. It emphasises the importance of focused teaching methods to improve students' ability to effectively utilise scientific concepts. On the basis of these findings, several implications were also outlined.