

ASSESSMENT FOR LEARNING: USING FORMATIVE ASSESSMENT IN MATHEMATICS

by:

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Assessment for learning, commonly known as formative assessment, is a powerful instructional tool that supports student learning by providing continuous feedback during the learning process. In mathematics education, formative assessment goes beyond grading – it helps teachers identify students' understanding, misconceptions, and readiness to learn new concepts, while simultaneously involving students in their own learning journey. When implemented effectively, formative assessment enhances mathematical thinking, deepens conceptual understanding, and promotes a growth-oriented classroom culture.

Unlike summative assessments, which evaluate what students have learned at the end of an instructional period, formative assessments are ongoing, informal, and integrated into daily instruction. Techniques such as observation, questioning, math journals, exit tickets, think-pair-share activities, and student self-assessments offer insights into how students are processing mathematical ideas (Black & Wiliam, 1998). These practices allow educators to adjust instruction based on real-time evidence of learning.

Feedback is a crucial component of formative evaluation. According to Hattie and Timperley (2007), timely and specific feedback that focuses on the task, the process, and self-regulation has a significant impact on student achievement. In a math classroom, this might include clarifying a student's misconception about fractions, suggesting alternative strategies for solving a word problem, or prompting students to explain their reasoning more clearly. Giving pupils constructive criticism enables them to take charge of their education and recognize that mistakes are a necessary part of the learning process.

Formative assessment also encourages student involvement in assessment. Pupils who engage in self-and peer evaluation develop metacognitive skills and become more conscious of their own learning preferences. The use of success criteria and rubrics in mathematics allows students to evaluate their progress and set goals, fostering a sense of responsibility and independence (Wiliam, 2011).

Furthermore, formative evaluation supports equity in the teaching of mathematics. By identifying and addressing gaps in understanding early, teachers can provide targeted support to struggling learners and differentiate instruction to meet diverse needs. This is especially important in math, where cumulative learning makes it difficult to progress without a solid grasp of prior concepts.

Technology tools also support formative assessment in math. Digital platforms like Kahoot, Desmos, Edpuzzle, and Formative enable real-time assessment, interactive problem-solving, and immediate feedback. These tools not only engage students but also provide teachers with data to inform instruction.

In conclusion, using formative assessment in mathematics is essential for developing a responsive, student-centered classroom. Through continuous feedback, active student involvement, and instructional adjustment, formative assessment serves as a bridge between teaching and learning. It ensures that all students are not only learning mathematics but also becoming confident, reflective problem-solvers.

References:

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- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81-112.

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