



Balancing Student Struggle in Mathematics Classrooms

Summary of Weingarden (2025)

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Academic Insights

Good teaching often walks a tightrope: Should students struggle first, or should teachers explain concepts clearly? This study explored how pre-service mathematics teachers think about this balance. Researchers found that teachers usually respond to student difficulty in three ways: telling the answer, supporting the process, or stepping back to let students struggle.

The key insight is powerful: deep understanding emerges when both productive struggle and explicit attention to concepts occur together. If students struggle without guidance, confusion grows. If teachers explain everything too quickly, students never develop mathematical thinking. The most effective classrooms combine challenging problems with well-timed conceptual discussion.

Apply This Now

Give students time to attempt challenging problems before providing explanations.

Add This in Your Lesson

After students attempt a problem, pause for a concept discussion connecting different strategies.

Avoid This Mistake

Do not immediately explain every step. Early explanations can prevent genuine thinking.

Keywords

productive struggle, conceptual understanding, mathematics teaching, teacher decision making, learning processes

Reference

Weingarden, M. (2025). Exploring pre-service mathematics teachers' perspectives on balancing student struggle and concept attention. *Teaching and Teacher Education*, 165, 105143.

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