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Posing cognitively demanding tasks to all students.

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From the text: Cognitively demanding tasks (CDT) are necessary for the development of students' mathematical reasoning skills. Research is unequivocal on the importance of giving students opportunities to engage in such tasks. Starting with the work of the QUASAR project, it has been shown that classrooms in which students engage in challenging tasks exhibit the highest learning gains. Although current reform efforts call for mathematics learning for all students, learners who struggle in mathematics or who have special education placements have less access to demanding mathematics. To successfully include all learners in the mathematics classroom, instruction needs to be designed so that it is accessible to all without compromising cognitive demand. How can we design instruction so that students of varying levels and abilities can develop strategies that work for them, understand the strategies of others, and make thoughtful choices about which strategies to use? The authors describe one episode that occurred in the classroom of Ms. Ramos, in which instruction was designed for an inclusion classroom to embrace learners with disabilities. Using the Universal Design for Learning (UDL), one approach to designing widely accessible instruction from the outset, the authors present an analysis of how this teacher created an accessible classroom focused on answering challenging questions.

Classification: D53 D43

Keywords: mathematical skills; thinking skills; mathematical concepts; difficulty level; problem solving; engagement; problem posing; cognitively demanding tasks
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