Using an Online, Interactive Pedagogical Strategy for Learning-Disabled Students in a High-Stakes Developmental Mathematics Course

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The number of students who enter community colleges requiring remediation in mathematics has been widely documented. Less often discussed in the literature is the fact that students with disabilities often face more challenges than students without disabilities in mathematics courses. In an attempt to make use of technology for this purpose, our study implemented and assessed a pilot of an online interactive mathematics program. Support included both online and in-person tutoring for students with disabilities who enrolled in a remedial, elementary algebra course. The primary learning outcomes were measured using a mathematics exam developed and administered university-wide by the City University of New York. This exam reflects the syllabus and learning objectives of the remedial mathematics course and is a common measure of learning. When the students in the treatment group took the final exam, we noted a significant increase in scores of approximately a half standard deviation. We also noted the elimination and surpassing of all achievement gaps.

Keywords: developmental mathematics, learning disabilities, online learning, computer-based instruction, game-based instruction

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