

Improving the Efficacy of Web-Based Learning in Remedial Mathematics Instruction

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It is the twenty-first century. We can decode the human genome, find ice on Mars, and discover a Higgs boson, but we are still struggling to educate our students in mathematics. Nearly half of community college enrollees require remedial instruction in mathematics; fewer than a third of these students ever move beyond it (Bailey & Thomas, 2009). The consequences on math-literacy levels and student access to higher education are severe. At the City University of New York, according to a New York Times editorial, 57% of students could not pass the mandated algebra course, and a faculty report found that "failing math at all levels affects retention more than any other academic factor" (Hacker, 2012).

Attempting to meet the needs of remedial students, colleges have multiplied the number, variety, and format of remedial courses, notably expanding online instruction and assessment. Web-based learning systems have been praised for their flexibility, giving access to innumerable exercises, examples, and solutions at the click of a button. They provide instant evaluation, reduce grading time for instructors, allow for easy compilation of student performance data, and their cost-effectiveness only adds to their appeal. But for all its advantages, web-based learning (WBL) has yet to fulfill the potential of twenty-first century technology to meet remedial students' needs. We outline here some of the clear successes of WBL in remedial instruction, identify drawbacks to learning that certain features of WBL can pose, and propose alterations to WBL that we feel would help our students.

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