Improving Undergraduate Mathematics Learning: The Effect of Small-Group Homework Tutoring on Remedial Mathematics Learning

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Target Course: Basic math (MATH10) and Elementary algebra (MATH20)

Intervention: small-group online homework tutoring

Abstract:
This project analyzed the findings from an 18-section experiment studying the effect of homework-completion tutoring on community college students’ remedial mathematics performance. The experiment involved 529 students registered for two remedial math courses: math skills and algebra. For each course, the experiment studied nine sections: three experimental with multiple tutors for online homework, three control with a single tutor for online homework, and three control with a single tutor for pencil-and-paper exercises. While state budget constraints delayed the availability of tutors for the experimental group until midway through the semester, that group outperformed the pencil-and-paper group at a 0.05 significance level, while the performance of the online homework control group categories surpassed those of the corresponding pencil-and-paper categories at up to a 0.001 significance level. In addition, for each course, math lab attendance for both the experimental and control online homework cohorts surpassed that of the pencil-and-paper cohorts. These results corroborate and extend earlier research and show the importance of active problem-solving rather than passive absorption in increasing remedial mathematics performance.