

# **Inclusion of Inquiry-Based Group Work with Computer-Assisted Instruction Significantly Improves University Student Achievement in Finite Mathematics**

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Abstract: What is the effect of incorporating inquiry-based group work sessions in a Finite Mathematics course in which the primary pedagogy is computer-assisted instruction? Our research at the University of Alabama at Birmingham (UAB), a major state university, investigates in a randomized quasi-experimental study the relative effects of combining computer-assisted instruction with inquiry-based group work sessions, traditional summary lectures of material to be covered in the computer-based part, and the latter combined with regular in-class quizzing on lecture material. Results show that a group work session with individually written reports and regular feedback statistically significantly improves students' ability in problem identification, showing evidence of problem-solving, and quality of explanation of reasoning leading to the solution. This is accomplished without any significant difference in students' grades or in growth of accuracy in pre- and post-testing.

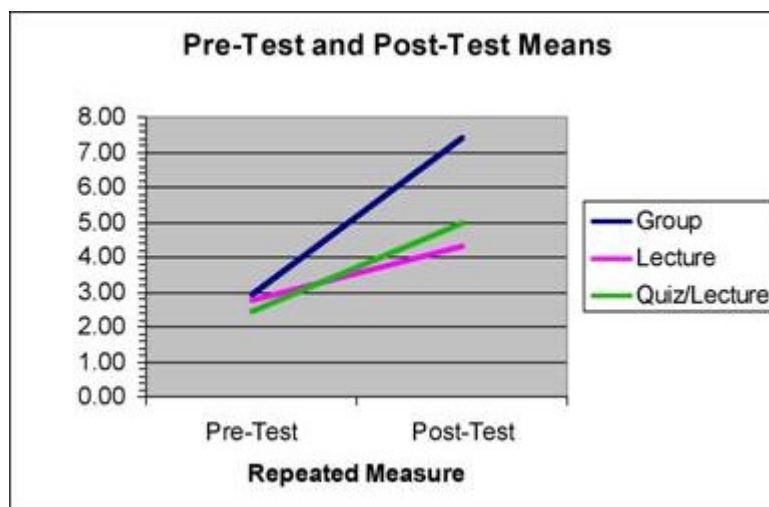


Figure. The Pre- and Post-Tests consisted of three problems, each scored on a rubric which awarded on each problem 0-1 point for Problem Identification, 0-1-2 points for Evidence of Problem-Solving, and 0-1-2 points for Explanation, for a total of 15 points possible on the test.

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