

## COMPARING ACTUAL V. PERCEIVED PEDAGOGICAL EFFECTIVENESS IN THE CONTEXT OF TEAM TESTING

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### ABSTRACT

Actual measures of the pedagogical effectiveness of team teaching and student-perceived measures of team teaching's pedagogical effectiveness were collected in several sections of a course with varying levels of the use of team testing. The results indicate that while students perceive team quizzes to have a substantial impact on their learning, this pedagogy in fact has no impact on actual learning.

In the team testing approach used here, students first completed each multiple-choice quiz individually and turned in their marked, scannable bubble sheet while keeping their test booklets. Once all students had completed the individual quiz and all bubble sheets had been submitted (taking typically 30 to 45 minutes), students were asked to sit with their groups and, using the same test booklet, complete a second bubble sheet as a group. Once all the groups turned in their group bubble sheets (typically 20 to 30 minutes), the instructor read through the answers to each of the questions, and offered brief explanations where necessary. Each student's grade was a weighted average of the two scores.

As expected, nearly all students score more highly when working in a group than they do individually. Some interpret this as evidence of learning, but this is really just learning test questions – the students may or may not have scored better if different test questions had been used. Other researchers use student perceptions as the only measure of learning, but these perceptions may not be accurate. The present research contrasts perceptions of learning with actual learning, as measured by a later test covering the same material but with different questions.

RQ1: How do student perceptions of the effectiveness of team testing compare with the actual effectiveness of team testing?

Data were collected in five sections of a single course (Marketing Research). The perceptions of learning were measured using a questionnaire that was given to the students at the end of the term. Actual learning was measured through multiple-choice quizzes and comprehensive final exam scores.

In the first section, all students completed all quizzes as individuals and then as members of teams. In the second and fourth sections, the students took quizzes 1, 2, and 4 in the individual-then-group format, but they took quiz 3 only individually. In the third and fifth sections, quizzes 1, 3, and 4 were taken in the individual-then-group format, but quiz 2 was taken only individually. The one quiz that would be taken individually only was noted on the syllabus and announced in class.

For the purposes of this research, the final exam data were partitioned into three sections. The first comprised questions covered on quizzes 1 and 4 (the conditions of these quizzes were identical across all conditions). The second comprised questions covered on quiz 2, and the third comprised questions covered on quiz 3. Although the final exam covered the same material as the quizzes, none of the exact final exam questions appeared on the quizzes.

In the perceived learning questionnaire, most students responded that the group quiz experience "had a medium positive effect on my learning" (43 percent), while 26 percent said it had a strong effect. (With a sample size of 142, the margin of error on the percentages reported here is +/-8 percent.) The vast majority (89 percent) expressed a preference for the group quiz format over the individual format.

A regression model was used to determine if students scored differently on the final exam when they had a team testing experience covering that material as compared to when they did not have a team testing experience covering that material. After partialling out the variance due to GPA, the residuals were then regressed on the team-testing/no-team-testing variable. This model was not significant ( $F(1,362) = 1.38$ ,  $p = .240$ ,  $R^2 = .004$ ). The point estimate of the coefficient was negative (standardized beta =  $-.062$ ). The power was adequate here to detect a small difference if it were present.

In summary, this study found that students will say that team testing is highly effective in improving their learning, even though no actual improvements in learning occur.