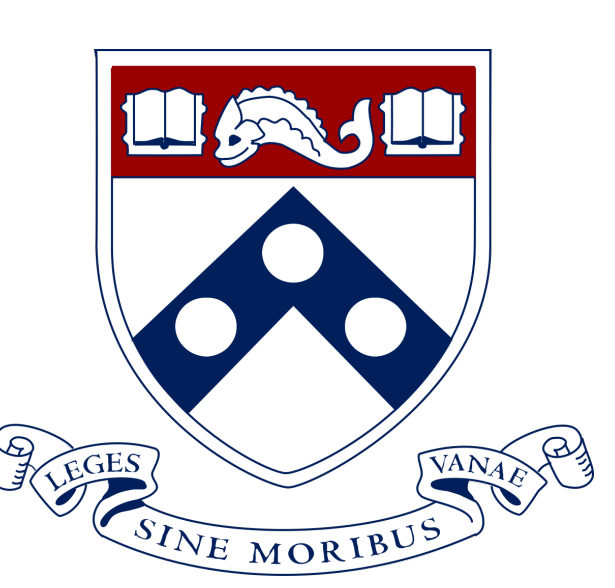


Previewing Beats Reviewing: How the Timing of Additional Instruction Affects Achievement



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Background

To achieve mastery, students often need repeated exposure to academic material. Providing lower-achieving students with additional instruction has been shown to increase achievement.

However, little is known about how the timing of academic support influences motivation and learning. Reviewing after class may implicitly communicate to students that they are behind their peers, while introducing concepts before class, as previews, may make students feel like they are ahead—thereby increasing self-efficacy.

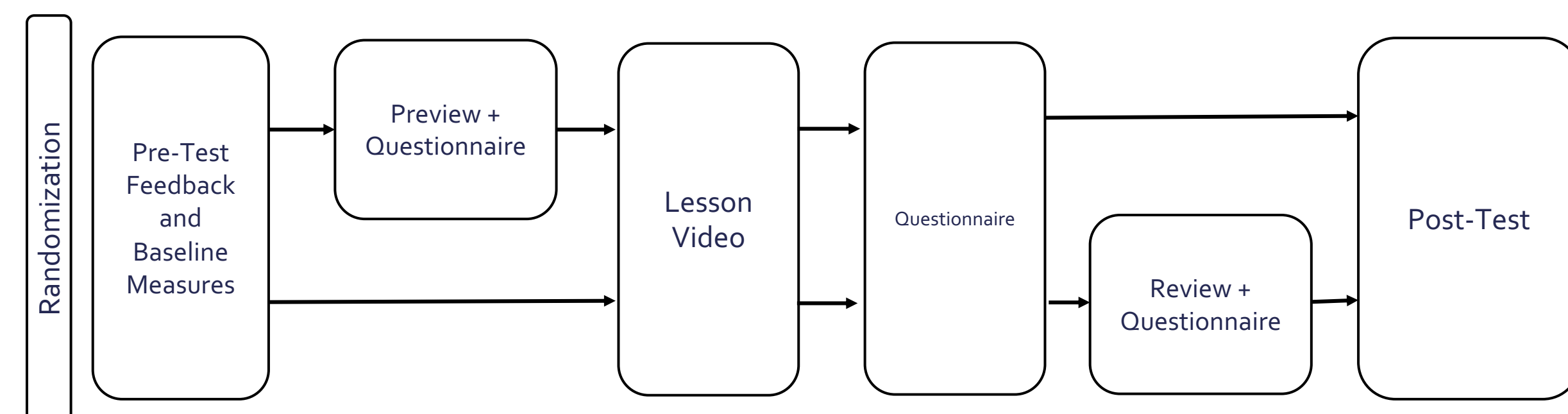
Hypothesis: Students who receive a preview of the lesson will have higher post-test scores than those who receive a review, and this effect will be mediated by self-efficacy.

Method

Sample: 901 U.S. adults recruited through Prolific who had no prior knowledge of modular arithmetic, as measured on a pre-test

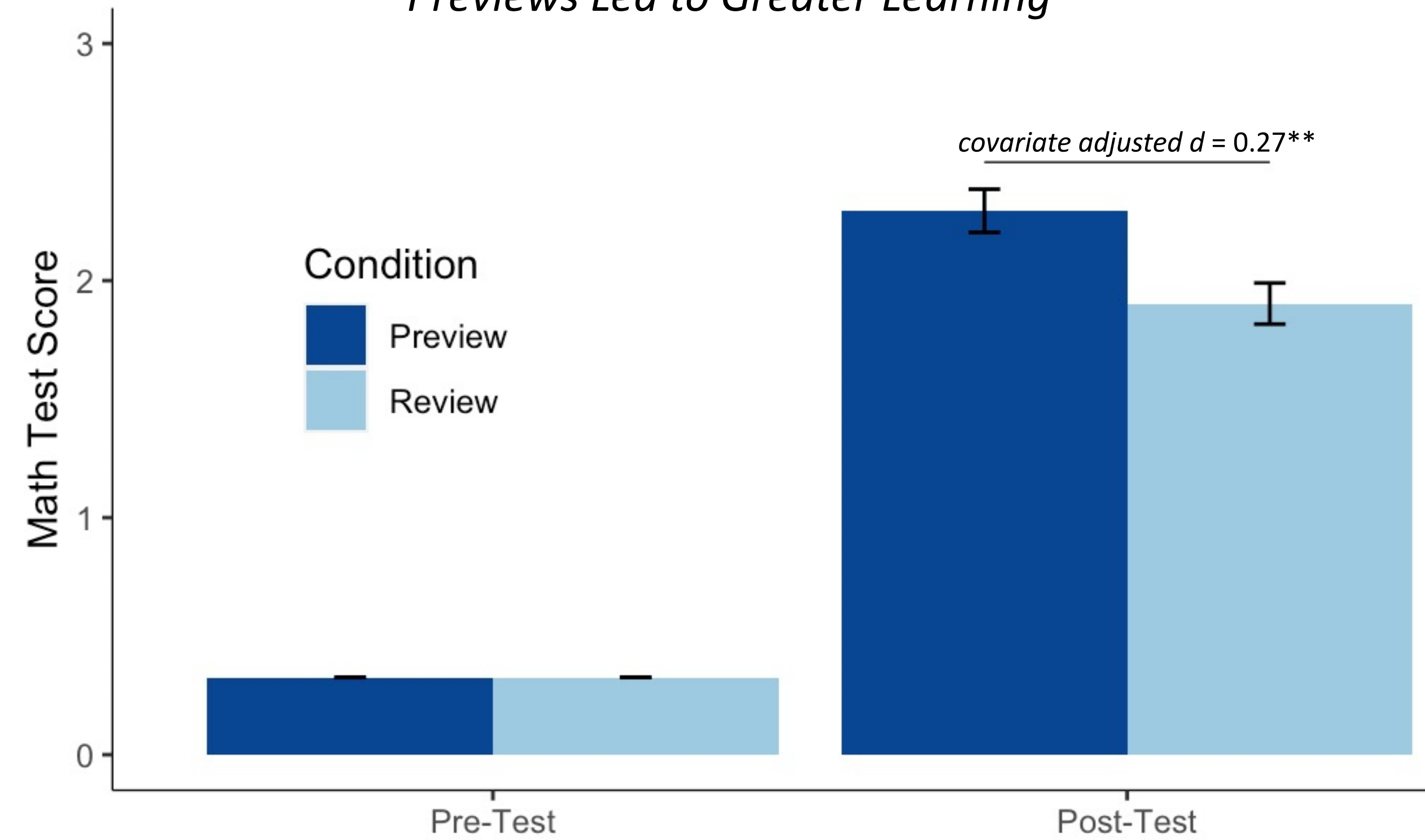
Modular arithmetic is a system of math focusing on remainders that is not often taught in schools. Therefore, it is novel for most adults.

Procedure: Participants watched a pre-recorded **lesson** on modular arithmetic and were randomly assigned to receive either a **preview** or **review** video of the lesson. They answered a **motivational questionnaire** after their additional instruction and after the lesson. Finally, they took a **post-test**.

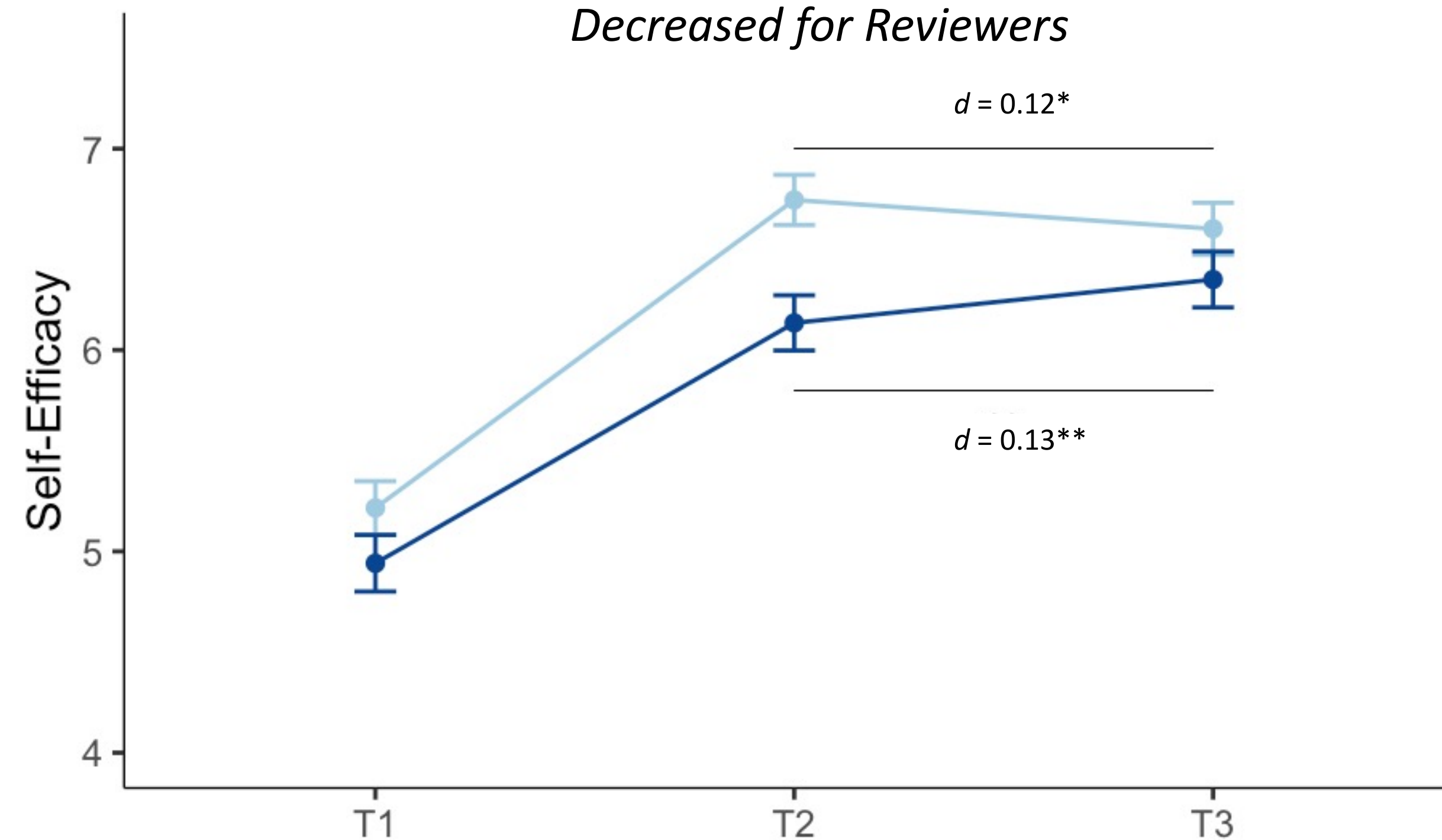


Results

Previews Led to Greater Learning

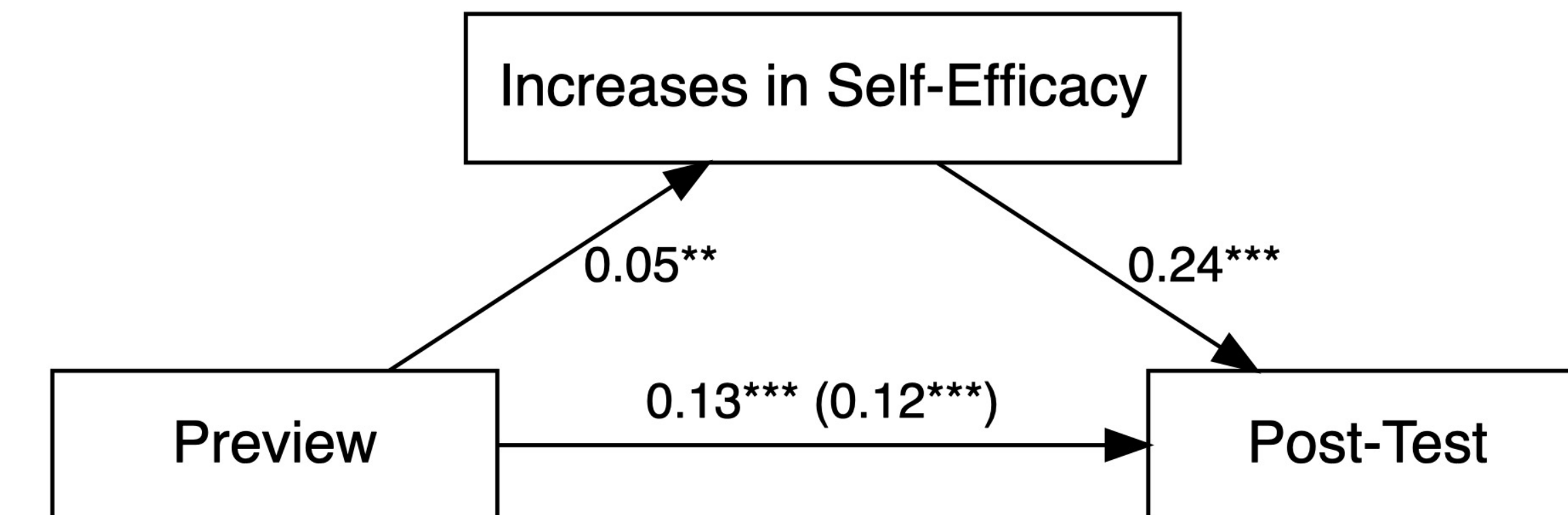


Self-Efficacy Continued to Increase for Previewers, But Decreased for Reviewers



Note. Error bars represent standard errors.

Increases in Self-Efficacy Mediated the Preview Effect on Performance



Note. *** $p < .001$, ** $p < .01$, * $p < .05$; all coefficients are standardized.

Discussion

Our findings suggest that previews are more effective than reviews at increasing achievement. This effect is partially mediated by increases in self-efficacy.

Limitations

Our study was conducted asynchronously and virtually. Therefore, participants were probably less able to make the social comparisons necessary to inform their self-efficacy.

We also did not have a no-treatment control group. Because of the well documented effect of increasing instruction time on achievement, we opted to keep total instruction time constant.

Future Directions

Future research should test the effect of previews in the classroom and explore additional mechanisms driving the effect.