Does the use of tests during class time improve academic grade?

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Introduction

Tests → retrieval practice → multiple effects

- Positive effects on long term memory and students’ achievement
  (Karpicke & Roediger, 2008; Roediger & Karpicke, 2006; Roediger et al., 2011)

- What about its effect on the Socioeconomic status (SES) achievement gap?
  Tests could reduce the SES achievement gap (Pennebaker et al., 2013; Smeding et al., 2013)
  Tests could increase evaluative pressure, and thus increase the SES achievement gap (Croizet & Claire, 1998; Croizet et al., 2001)

Goal of this pre-registered study:
1) Replicating the positive effect of testing in an ecological academic context (real class context, real exam grade)
2) Examining whether the positive effect of testing depends on students’ SES.

Method

N = 287 (248 women; 37 men) undergraduate psychology students enrolled in a methodology class.

- Control group: Teaching as usual (academic year 2017-18)
- Experimental group: Teaching as usual + tests (not graded, not corrected) at the end of each 2-hours lesson (academic year 2018-19)

Everything else was identical for both academic years: same teachers, lesson content and exam questions.

Measure of SES (Stephens et al., 2012):
- First generation students: none of their parents obtained a higher education degree (N = 128)
- Continuous generation students: at least one of their parents obtained a higher education degree (N = 147)

Results

ANOVA test condition X SES

- Main effect of test
  F(1, 266) = 11.839, p < .001, η² = .043

- Marginal main effect of SES
  F(1, 266) = 3.14, p = .078, η² = .012

- The interaction between test and SES was not significant
  F(1, 266) = 0.31, p = .578, η² = .001

Discussion

- This study replicates the positive effect of testing (Roediger & Karpicke, 2006) within real classes in which students were tested on the actual lesson content and evaluated with real grades.
- No moderation by SES → both 1st generation and continuous generation students benefited from the test.
- Perspectives for future research:
  - What is the best control group in academic contexts (Kornell et al., 2012): Nothing? Students’ restudy? Teachers’ repetition? Note taking?
  - Are tests the most adaptive retrieval practices in the context of a real class (Heitmann et al., 2018)?
  - Could the positive effects of testing apply to any class content?

References


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