

Do Self-Regulation and Retrieval Practice Impact Complex Category Learning?

Kennadi C. Cook, Addison L. Babineau, & Sarah K. Tauber



Introduction

- Retrieval practice is a learning strategy that has been found to improve both memory and learning in episodic memory tasks (e.g., Rowland, 2014).
- In one case, retrieval practice was also found to benefit learning of a complex natural category (Jacoby et al., 2013)
- However, in another, retrieval practice did not impact category learning (Babineau et al., 2022)
- One factor that may impact the effect of retrieval practice is if the process is self-regulated (as in Babineau et al., 2022) or experimenter-controlled (as in Jacoby et al., 2013).
- **Our goal:** investigate how retrieval practice and the learning context (SRL or experimenter-controlled) impact category learning.
- We anticipated that when category learning is controlled by researchers, classification performance will benefit from retrieval practice.

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Procedure

Experimenter-Controlled Study

Organophosphate

Next

Self-Regulated Study

Organophosphate

Next

What type of compound would you like to study next?

A compound from a different chemical category

A compound from the same chemical category that you just studied

Experimenter-Controlled Test

What type of compound is this?

Epoxide Nitrile Organochloride
 Organophosphate Pyrethroid Sulfone

What type of compound is this?
 Correct, this is a Nitrile

Epoxide Nitrile Organochloride
 Organophosphate Pyrethroid Sulfone

Next

Self-Regulated Test

What type of compound is this?

Epoxide Nitrile Organochloride
 Organophosphate Pyrethroid Sulfone

What type of compound is this?
 Correct, this is a Nitrile

Epoxide Nitrile Organochloride
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What type of compound would you like to study next?

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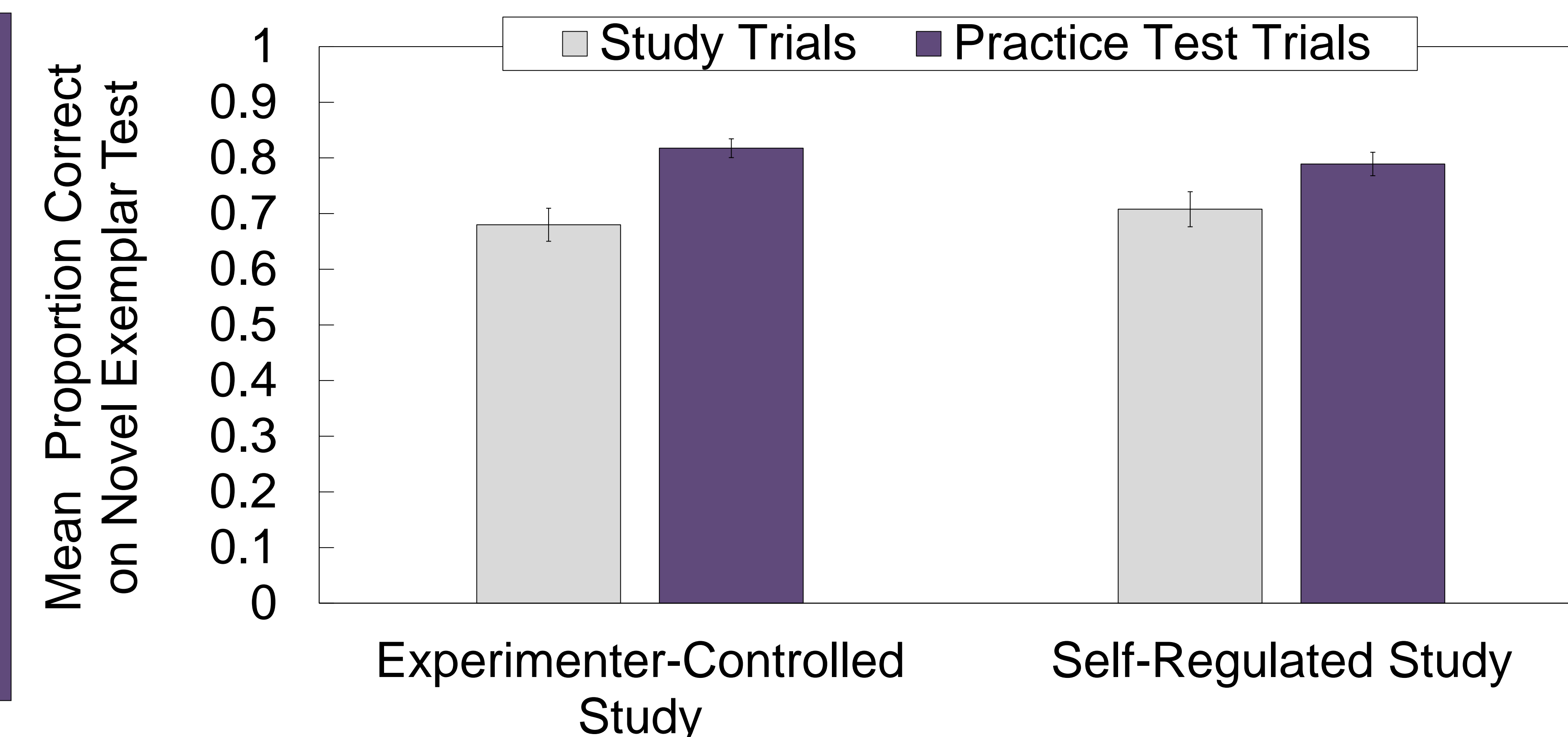
Study Phase

Test Phase

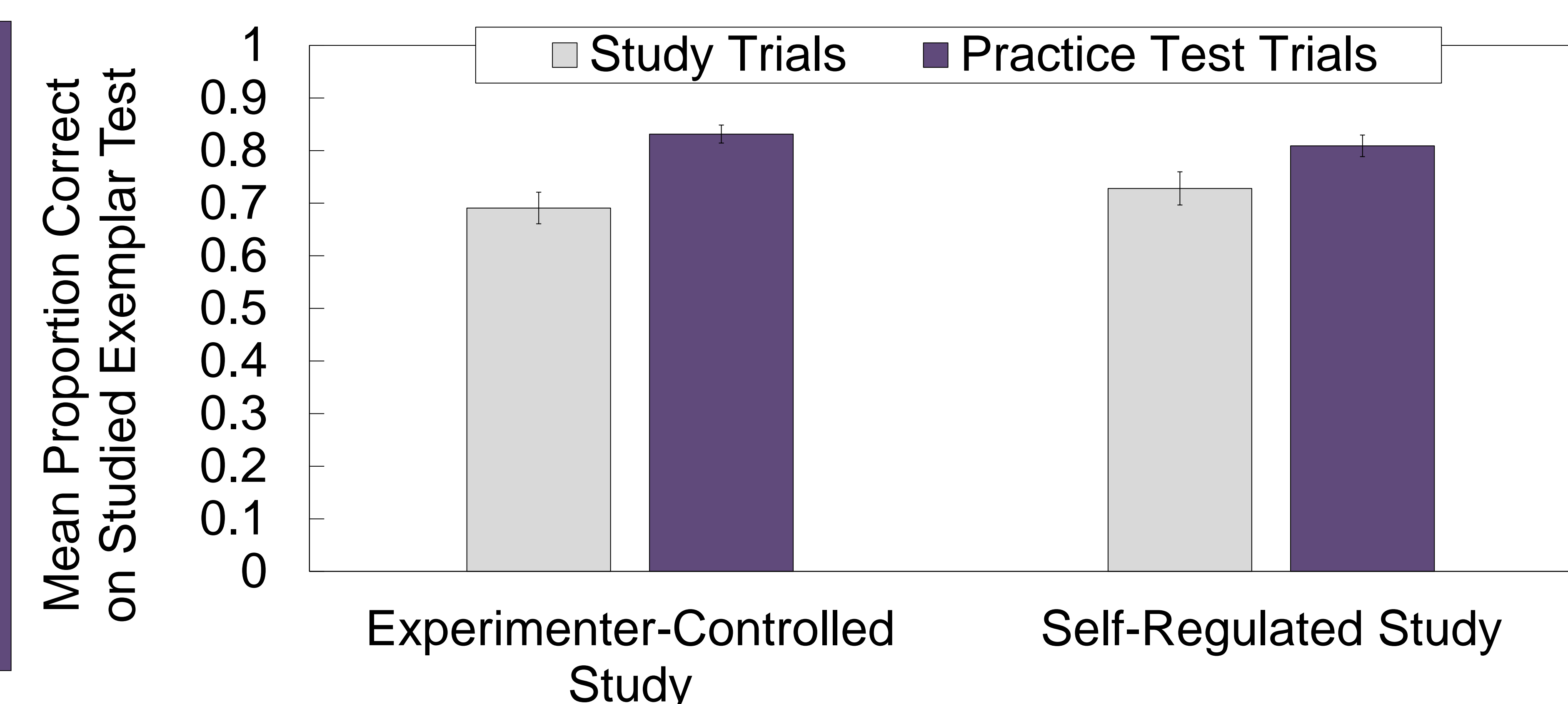
Novel exemplar classification test
 Studied exemplar classification test

Experiment Results

Performance on the Novel Exemplar Test



Performance on the Studied Exemplar Test



The number (and percent) of participants in each group who selected practice trials in response to the question, "Which of the two study methods do you think would be best for your learning?"

	Study Trials	Practice Test Trials
Experimenter-Controlled	43 (86%)	39 (78%)
Self-Regulated	37 (74%)	38 (76%)

Discussion & Future Directions

- Participants who completed practice test trials performed better on both the novel and studied exemplar classification tests relative to those who completed study trials.
- Surprisingly, test performance was not influenced by whether learning was self-regulated or experimenter-controlled.
- Self-regulation during learning did not resolve the inconsistency of retrieval practice effects during category learning (Babineau et al., 2022; Jacoby et al., 2013); however, other differences (e.g., number of to-be-learned categories) may.