

Retrieval Prompts and Delayed Recall in Introductory Statistics

A classroom pilot with a seven-day follow-up

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Abstract

This review manuscript reports a fictional randomized pilot in which brief retrieval prompts improved seven-day recall relative to rereading, with uncertainty appropriate to the small sample.

Keywords

- retrieval practice
- statistics education
- delayed recall

Highlights

- The analysis follows the preregistered primary contrast.
- Confidence intervals remain wide and invite replication.

1. Introduction

Retrieval practice can strengthen memory, but short classroom studies often omit delayed outcomes. We preregistered a pilot comparison of retrieval prompts and matched rereading [1].

2. Methods

Eighty-four fictional adult learners were randomized after the same lesson. The primary outcome was a ten-item quiz seven days later; allocation was concealed during scoring.

$$g = \frac{S_{day7} - S_{base}}{10 - S_{base}}$$

3. Results

The retrieval group retained more items, although the pilot was not powered for subgroup effects and three follow-up records were missing.

3.1 Primary outcome

Condition	Analysed n	Mean score / 10
Retrieval prompts	41	7.4
Matched rereading	40	6.5

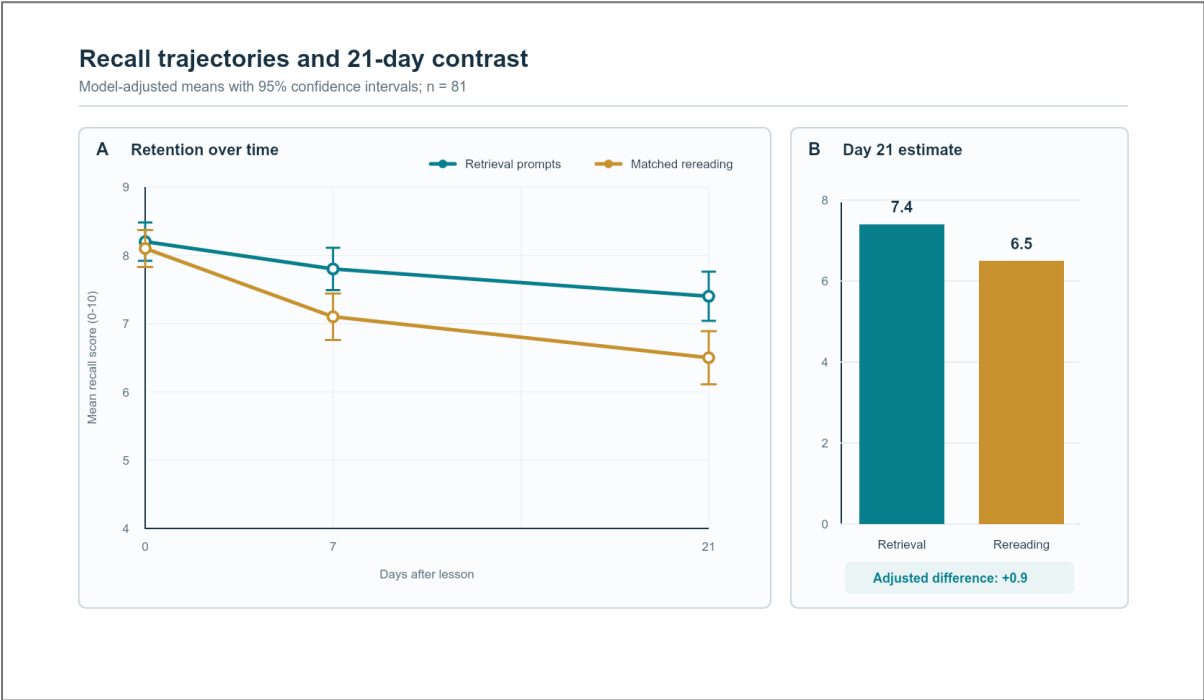


Figure 1 Retrieval prompts and recall

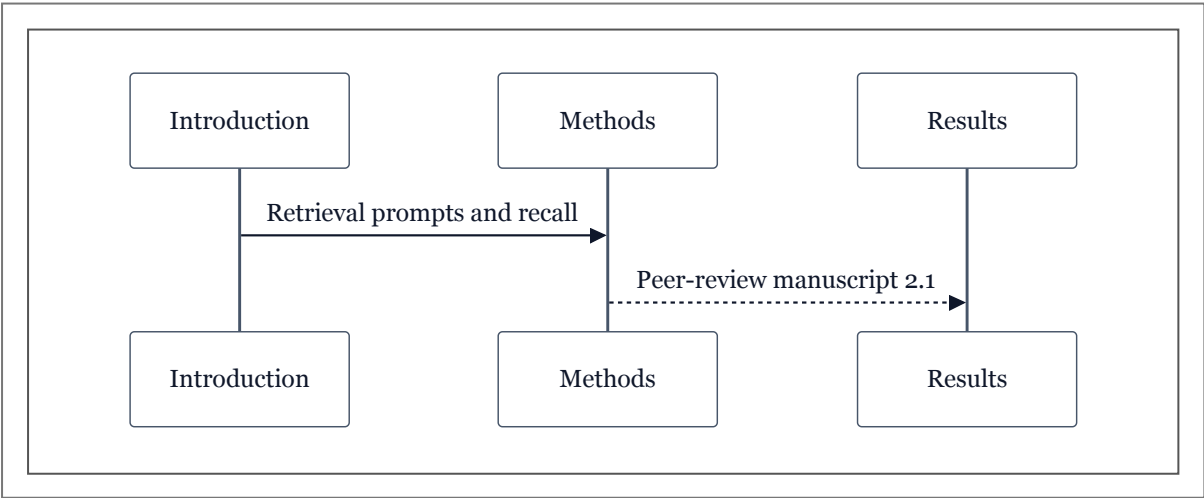


Figure 2 Workflow: Retrieval prompts and recall

| The analysis follows the preregistered primary contrast.^[1]

3.1.1 Reproducibility check

The analysis notebook is supplied for review.

```
condition,n,mean_score  
retrieval,41,7.4
```

4. Discussion

The direction is consistent with the registered hypothesis, but the single lesson and modest sample constrain inference. Review should focus on attrition handling and the transfer value of the quiz.

5. References

[1] Maple Vale Centre for Learning Science. Registered pilot protocol MV-17. Working Paper, 2026.

1. A synthetic, de-identified dataset is supplied for review. ↩

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Author contributions

P.S. drafted the protocol; O.M. prepared materials; both authors analysed and revised the manuscript.

Competing interests

The authors declare no competing interests.

Ethics statement

Approved within this fictional study by the Maple Vale review panel; written consent was specified.

Data availability

A synthetic, de-identified dataset is supplied for review.

Code availability

The analysis notebook is supplied for review.

Acknowledgments

We thank two pilot instructors for comments on the task wording.

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