The Effect of Optional Retrieval Practice on Long Term Retention

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Introduction

Retrieval Practice

- Research shows that the act of taking a test has a positive effect on learning the tested information
- Benefit of testing is greater when the same material is tested several different times (Karpicke & Roediger, 2007)
- Enhanced memory for tested material occurs across many different types of retrieval techniques and contexts
- Benefit of retrieval over restudy is known as the *Retrieval Practice Effect*

Research

- McDaniel et al. (2011) used retrieval practice in an eighth-grade science class, administering clicker quizzes before lectures, after lectures, and one day before the exam
  - Material that was tested in clicker activities was recalled at greater rates than material that was not included in clicker activities on a final exam
- Leeming (2002), found that frequent quizzes lead to higher grades in a college psychology course
  - Students also reported better studying and a decrease rate of withdrawals from students.
- We aren't aware of any scientific literature directly measuring test anxiety after completing retrieval practice activities

Hypotheses

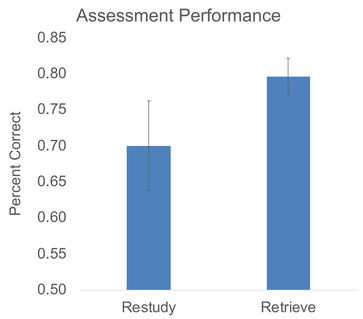
- Retrieval practice will produce greater learning compared to restudying material
- Students participating in the review activities will report reduced test anxiety overall and reduced anxiety about their upcoming exam (related to the review activities)

Method

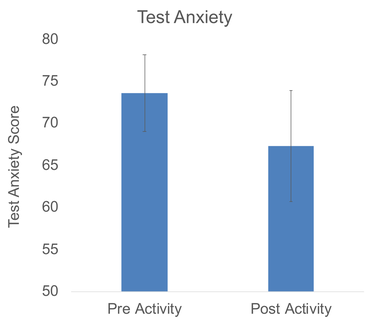
- Students complete daily review activities leading up to their exam in their Cognitive Psychology course
  - Review activities include restudy and retrieve tasks (within-subjects design)
    - Restudy: students read questions and answers
    - Retrieve: students read questions, type in answers, then review correct answers
- Participants also answer demographic questions, complete the Cognitive Test Anxiety Scale (Cassady & Johnson, 2002), and answer questions about anxiety about the upcoming exam
- Data collection is in progress

Preliminary Results

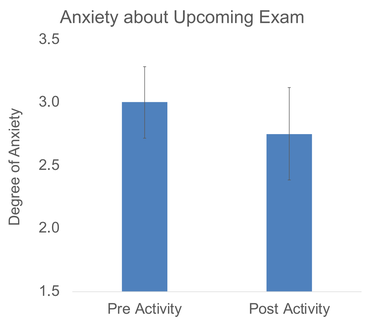
Participants:
- 17 Lynn University students completed at least 1 activity; 8 students completed all activities
- Ages 19-45 (including sophomores, juniors, and seniors)
- Majors included psychology, biology, environmental science, criminal justice, and marketing



t = 1.94
p = .047



t = .20
p = .43



t = .42
p = .34

Conclusions

Other interesting findings

- Exam scores were negatively correlated with Test Anxiety, $r = .59$, $p = 03$.
- Exam scores were negatively correlated with reported anxiety about the upcoming exam, $r = .65$, $p = 02$.

Summary of findings

- Performance on the final multiple choice assessment was better in the retrieve condition than the restudy condition.
- Reduction in test anxiety
- Both insignificant but it is possible to see this change as we receive more incoming data from participants.

Future Directions

- Outside of the academic setting.
- Do young children experience the same effect? Elderly?
- Space out study sessions more/less.

References

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