Optimizing the 3R study strategy to learn from text

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Overview

• Theoretical background
• Research experiment
  – Theory
  – Method
  – Results
  – Conclusion
    • Theoretical implications
    • Practical implications
    • General
Theoretical background: Common study strategies

Common study strategies

- Re-reading notes or textbook: 84%
- Do practice problems: 43%
- Flashcards: 40%
- Rewrite notes: 30%
- Study with friends: 26%
- Memorization: 19%

Source: Jeff Karpicke 2009 Purdue University

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Theoretical background: What works

Active Reading Strategies

Improving Comprehension
Theoretical background: 3R study strategy

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**3R**
Recite, Review
Recite, Review
Recite, Review

A more significant and efficient way to study

**Read**
- Read a passage, term, or concept that you need to memorize
- Remember to CHUNK study time, don’t cram

**Recite**
- Recite out loud all of what you can remember
- Recall the information out loud to yourself, a friend, or even your dog!

**Review**
- Read the passage, term, or concept that you need to memorize *again*
- Make notes of any information you couldn’t recall

**READ, RECITE, REVIEW**

The 3R Method had been shown to improve performance, relative to re-reading only and note-taking. **SAVE TIME** – Use the 3R Method when you are exercising, waiting in line, walking to class, and so on.

Adapted from the Read-Recite-Review Study Strategy: Effective and Portable by McDaniel, Howard and Einstein (Psychological Science, 2006)
Research experiment: Theory

Intentional Verbatim Questions
- Comprehension Questions
- Incidental No questions

Intentional Verbatim Questions
- Comprehension Questions
- Incidental Free recall

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3R

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Research experiment: Method

- 131 participants
  - Week 1: Prior knowledge test: industrial revolution
  - Week 2: 5 conditions
    - Text of 1000 words on industrial revolution
  - Week 3:
    - Final test: repeated and new items
      - Verbatim
      - Comprehension

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<th>Review</th>
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Research experiment: Results

Repeated verbatim and comprehension questions

Verbatim or comprehension questions during reading

- Better retrieval of questioned information during recite phase compared to free recall
- Better final test performance after a one week delay compared to free recall
Research experiment: Results (2)

Repeated verbatim and comprehension questions

Verbatim or comprehension questions during read and recite (TAP)

Better retention after a one week delay as compared to the other conditions
Research experiment: Results (3)

New verbatim and comprehension questions

Free recall in the recite phase

No better performance on new verbatim questions as compared to the questions conditions

Better performance on new comprehension questions as compared to answering verbatim questions during read and recite
Conclusion – Theoretical implications

- Specific questions during reading $\rightarrow$ focus $\rightarrow$ augments chance of retrieval during recite phase
- Stronger memory path $\rightarrow$ successful retrieval in final test is easier compared to free recall
- Learning without clear intentions is not easy
- TAP works
Conclusion – Practical implications

• 3R study strategy helps students to prepare for questions which will be asked again after a delay
• To remember specific information → specific instructions are needed
• Stimulating the same cognitive processes during reading and reciting is important
Conclusion - General

• Adding verbatim questions to the read and recite phases of the 3R strategy → enhances intentional learning but hampers incidental learning from an expository text.

• Adding comprehension questions to the read and recite phases of the 3R strategy → enhances intentional learning without detrimental effects on incidental learning.

• Comprehension questions appear to be an effective means to optimize the 3R strategy in learning from expository text.
Thank you for your attention!

Questions?

Contact

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