

Retrieval Practice

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Explicit Instruction Academy Webinar

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Retrieval Practice

- Retrieval Practice Basics
- Retrieval Practice for the Classroom
- Retrieval Practice for Student Study
- Retrieval Practice for Presentations



Retrieval Practice Basics

Retrieval Practice

We have explored retrieval practice in the past. On a separate paper, write what you remember about Retrieval Practice. (Three minutes)

Retrieval Practice

- ▣ **Review your list. Type in your favorite idea about Retrieval Practice.**

Feedback

- ▣ **Retrieval practice is a strategy in which calling information to mind subsequently enhances and boosts learning.**

Agarwal, Roediger, McDaniel, & McDermott (2018)

- ▣ **“Retrieval practice” is a learning strategy where we focus on getting information out. Through the act of retrieval, or calling information to mind, our memory for that information is strengthened and forgetting is less likely to occur.**

Agarwal, Roediger, McDaniel, & McDermott (2018)

Feedback

- ▣ **Benefits of Retrieval Practice**
 - ▣ Strengthens recall of information
 - ▣ Moves beyond short-term memory
 - ▣ Strengthens long-term memory
 - ▣ Makes learning stick more than re-exposure to the original material
 - ▣ Tells you what you know and don't know

Feedback

▣ Benefits of Retrieval Practice

- ▣ Improves organization of knowledge
- ▣ Improves understanding
- ▣ Improves transfer of knowledge to new concepts

Feedback

▣ Retrieval Practice is BEST when

- ▣ Retrieval is challenging BUT successful
- ▣ Retrieval Practice is delayed
- ▣ Coupled with feedback
- ▣ Feedback includes correct/incorrect
- ▣ Feedback includes explanations

Feedback

▣ Retrieval Practice is less helpful when

- ▣ Very easy
- ▣ Very difficult

Feedback

▣ Why does retrieval practice work?

- ▣ Requires mental effort

- ▣ “The surprising truth is that probing one's memory in an effort to locate a bit of knowledge is an excellent way to ensure that the knowledge becomes permanently affixed in memory.”

Roediger & Butler, 2011



Retrieval Practice

For the Classroom

Retrieval Practice – Teacher - Guided

1. Verbal Retell to Partner
2. White boards
3. Quick write
4. Flash cards
5. Low-stakes quizzing
6. Multiple-choice items using hand signals or Clickers
7. Responding to written questions
8. Bell-work
9. Exit tickets

Which one brings about most learning ? Why?

Third graders have read an article about the sun.

Option 1:

The next day, students answer questions about the sun. The following procedure is followed: 1) a question is presented on the screen, 2) students think about the answer 3) students share with their partners, 4) individuals share out, and 5) the teacher provides feedback.

Option 2:

The next day, students reread the article, highlighting important information within the passage. Using their highlighting, students make a list of the important points about the sun and compare their lists to those of their partners.

Which one brings about most learning ? Why?

Students have been introduced to spelling words with ai and a-e.

Option 1:

Students copy each word five times, checking each word against a model to ensure accuracy. When done, students highlight in red the grapheme ai or a-e. During the work session, the teacher circulates and monitors.

Option 2:

The teacher dictates a word. Students repeat the word and then say the sounds in the word. Students then say the sounds as they write the word. Finally, the students check the spelling against the correct spelling, rewriting words if an error occurs.

Which one brings about most learning ? Why?

7th graders read an article concerning the Panama Canal.

Option 1:

Students were asked to remember as much as they could about the Panama Canal. A quick write procedure was used. The teacher circulated and monitored. The class discussed the information they wrote down.

Option 2:

Students were asked to answer these questions in writing.

Why was the Panama Canal built?
Why did the French abandon the project
How did the USA reduce complications?
What are the main purposes of the Panama Canal?
Why is the Panama Canal considered one of the Seven Wonders of the Modern World?

Feedback was provided on answers.



Retrieval Practice

For Student Study

Self Retrieval Practice Roediger & Karpicke (2006) Rereading VS Self-Testing

Procedure: Subjects read a prose passage and then either **restudied** the passage or **recalled** as much of it as they could on a free recall test. No feedback was given on the free recall text.

Results: Taking the test led to better final recall 2 days or 1 week later than studying the entire passage again.

Conclusion: Testing enhanced learning more than additional studying. The act of retrieval when taking a test promoting long-term retention.

Illusion of Mastery from Rereading

When students reread and reread the text, they become familiar with the text, giving them a **false confidence**. Students think, "I can recall it now. I will recall it in the future."

Students who don't quiz themselves tend to **overestimate** how well they have mastered the material.

Self Retrieval Practice – Roediger & Karpicke (2006) Rereading VS Self-Testing

Benefits of Self-Testing

1. Tells you what you know and don't know.
2. Recalling what you have learned causes your brain to **reconsolidate the memory**, which **strengthens its connections** to what you know and makes it **easier to recall in the future**.

Which one brings about most learning ? Why?

Student is studying Social Studies vocabulary using flash cards with word on one side and definition and example sentence on the other side.

Option 1:

Student reads the word, flips the card over and reads the definition and example sentence.

Student repeats procedure three times.

Option 2:

Student reads the word and orally states the definition. Then, the student turns the card over and reads the answer. If correct, records + on card. If incorrect, records - on card.

Student repeats the procedure, removing cards from deck when three +'s remove the card from the deck.

Which one brings about most learning ? Why?

Student is studying science chapter.

Option 1:

Student reads the chapter, highlighting critical information.

Student rereads the chapter, taking notes on the chapter.

On the next day, the student rereads the chapter.

Option 2:

Student reads the chapter and makes a list of topics.

For each topic, the student writes down recalled information. Then, the student checks recalled information with the chapter.

On the next day, the student repeats with topics not strongly recalled.

Retrieval Practice – Self-Testing

Example Procedures :

1. Self – quizzing
2. Flash cards
3. Recall – verbally or written
4. Read – Cover – Recite – Check
5. Do item - Check

Retrieval Practice – Self-Testing

1. Self – quizzing

Examples

- Complete practice tests
- Write a test and trade with study mate

Retrieval Practice – Self-Testing

2. Flash Cards for Vocabulary

- a. Prepare flash cards with word on front and definition on back.
- b. Read word.
- c. Think of definition and example. Write down definition or say it out loud.
- d. Turn card over and check answer.
- e. Record + for correct. Record – for incorrect.
- f. When there are three consecutive +'s

Retrieval Practice – Self-Testing

3. Recall – verbally or written

- Write down topics covered.
- Write down everything you remember about a topic or rehearse it orally.
- Compare recalled information to content in book or notes.
- For topics with poor recall, repeat procedure at a later time.

Retrieval Practice – Self-Testing

4. Read Cover Recite Check

- Read** – Read the information.
- Cover** – Cover information with your hand or an index card.
- Recite** – Recite the information out loud.
- Check** – Lift your hand or index card and check your information.

Retrieval Practice – Self-Testing

4. Read Cover Recite Check

- ❑ **Read** – Read the information.
- ❑ **Cover** – Cover information with your hand or an index card.
- ❑ **Recite** – Recite the information out loud.
- ❑ **Check** – Lift your hand or index card and check your information.

Retrieval Practice – Self-Testing

5. Do item check

Answer chapter questions

- ❑ Fold a paper into three columns: question, my answer, revised answer.
- ❑ Write down the first question in the first column.
- ❑ Write an answer to the question without looking back in the book.
- ❑ Check the answer with the content in the book. If the answer is incorrect or incomplete, write a revised answer in the third column.
- ❑ Later, check your recall of revised answers.



Retrieval Practice

For Presentations

Retrieval Practice for Presentations

How we teach = How we want them to teach

Retrieval Practice for Presentations

Model - Model - Model - Model

Retrieval Practice for Presentations

On a separate paper, write down retrieval practice procedures that you might incorporate into your presentations. (Three minutes)

Retrieval Practice for Presentations

Review your list. Type in your favorite Retrieval Practice procedure that you plan to incorporate into your presentations.

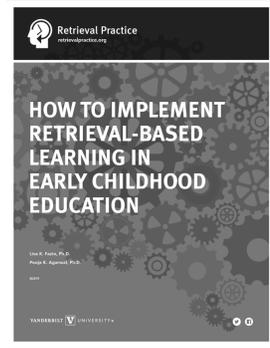
Feedback

Procedures that I used in presentations recently.

- Partners retell content
- Multiple Choice Items
- Quick Write
- Complete graphic organizer

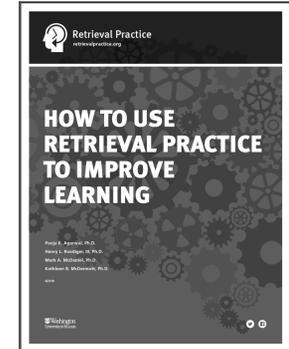
Retrieval Practice – Primary Guide

Retrievalpractice.org



Retrieval Practice – Intermediate and Secondary Grades

Retrievalpractice.org



Retrieval Practice for Students

www.learningscientists.org

