

第4問 (配点 16)

Your teacher has asked you to read two articles about effective ways to study. You will discuss what you learned in your next class.

How to Study Effectively: Contextual Learning!

Tim Oxford

Science Teacher, Stone City Junior High School

As a science teacher, I am always concerned about how to help students who struggle to learn. Recently, I found that their main way of learning was to study new information repeatedly until they could recall it all. For example, when they studied for a test, they would use a workbook like the example below and repeatedly say the terms that go in the blanks: "Obsidian is igneous, dark, and glassy. Obsidian is igneous, dark, and glassy..." These students would feel as if they had learned the information, but would quickly forget it and get low scores on the test. Also, this sort of repetitive learning is dull and demotivating.

To help them learn, I tried applying "contextual learning." In this kind of learning, new knowledge is constructed through students' own experiences. For my science class, students learned the properties of different kinds of rocks. Rather than having them memorize the terms from a workbook, I brought a big box of various rocks to the class. Students examined the rocks and identified their names based on the characteristics they observed.

Thanks to this experience, I think these students will always be able to describe the properties of the rocks they studied. One issue, however, is that we don't always have the time to do contextual learning, so students will still study by doing drills. I don't think this is the best way. I'm still searching for ways to improve their learning.

Rock name	Obsidian
Rock type	igneous
Coloring	dark
Texture	glassy
Picture	

How to Make Repetitive Learning Effective

Cheng Lee

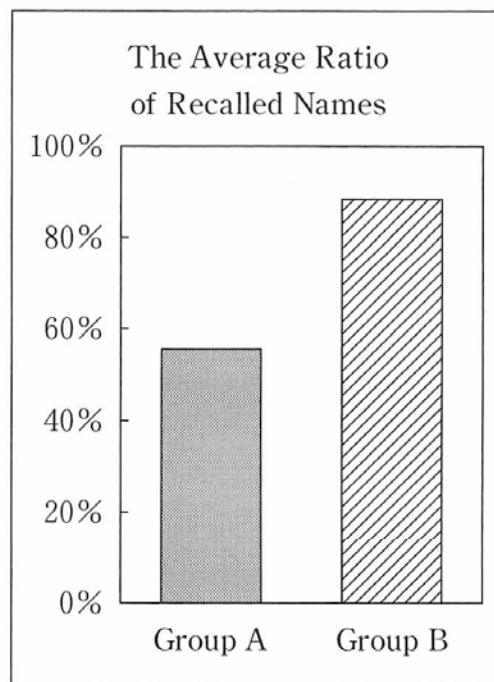
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Mr. Oxford's thoughts on contextual learning were insightful. I agree that it can be beneficial. Repetition, though, can also work well. However, the repetitive learning strategy he discussed, which is called "massed learning," is not effective. There is another kind of repetitive learning called "spaced learning," in which students memorize new information and then review it over longer intervals.

The interval between studying is the key difference. In Mr. Oxford's example, his students probably used their workbooks to study over a short period of time. In this case, they might have paid less attention to the content as they continued to review it. The reason for this is that the content was no longer new and could easily be ignored. In contrast, when the intervals are longer, the students' memory of the content is weaker. Therefore, they pay more attention because they have to make a greater effort to recall what they had learned before. For example, if students study with their workbooks, wait three days, and then study again, they are likely to learn the material better.

Previous research has provided evidence for the advantages of spaced learning. In one experiment, students in Groups A and B tried to memorize the names of 50 animals. Both groups studied four times, but Group A studied at one-day intervals while Group B studied at one-week intervals. As the figure to the right shows, 28 days after the last learning session, the average ratio of recalled names on a test was higher for the spaced learning group.

I understand that students often need to learn a lot of information in a short period of time, and long intervals between studying might not be practical. You should understand, though, that massed learning might not be good for long-term recall.



問 1 Oxford believes that 24 .

- ① continuous drilling is boring
- ② reading an explanation of terms is helpful
- ③ students are not interested in science
- ④ studying with a workbook leads to success

問 2 In the study discussed by Lee, students took a test 25 after their final session.

- ① four weeks
- ② immediately
- ③ one day
- ④ one week

問 3 Lee introduces spaced learning, which involves studying at 26 intervals, in order to overcome the disadvantages of 27 learning that Oxford discussed. (Choose the best one for each box from options ①~⑥.)

- ① contextual
- ② extended
- ③ fixed
- ④ irregular
- ⑤ massed
- ⑥ practical

問 4 Both writers agree that 28 is helpful for remembering new information.

- ① experiential learning
- ② having proper rest
- ③ long-term attention
- ④ studying with workbooks

問 5 Which additional information would be the best to further support Lee's argument for spaced learning? 29

- ① The main factor that makes a science class attractive
- ② The most effective length of intervals for spaced learning
- ③ Whether students' workbooks include visuals or not
- ④ Why Oxford's students could not memorize information well