Improving Learning With Classroom Quizzes

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BACKGROUND

Tests are usually thought to serve assessment purposes, but they can also benefit long-term learning better than repeated studying.¹ Multiple tests are better than single tests in enhancing learning.¹ Feedback provided after testing also enhances learning.² Prior laboratory research supports these principles, yet none have been thoroughly tested in a classroom setting using a true experimental design. We examined whether a test-enhanced learning program, integrated with daily classroom practices, is an effective method of enhancing retention in a middle school setting.

METHOD

This research was conducted at a public middle school in Illinois. Materials

Textbook material from Social Studies and Science classrooms

Multiple-choice quizzes followed by immediate feedback

Within-subjects design: Half of the target facts were quizzed during lessons, half were not tested (but non-tested items were covered during the class lecture by the teacher)

Procedure

Students took a multiple-choice pre-test over tested items. The teacher was not present for the pre-test and did not know which target facts were tested. Following the pre-test, the teacher taught the lesson for the day. Immediately after the lesson, students took a multiple-choice post-test over tested items. Approx. 2 days later, students took a review test over tested items. Retention was measured 2-14 days later with multiple-choice exams comprised of all (tested and non-tested) target facts.

EXPERIMENT 1

In Social Studies, we used a test-enhanced learning program. Students were quizzed during the lesson, and the teacher taught the lesson for the day. Immediately after the lesson, students took a multiple-choice post-test over tested items. Testing information led to significant benefits in retention, even over the long term. Further analyses revealed that students with lower standardized test and pre-test scores showed greater benefits of testing ($r = -.38$ and $r = -.39$, respectively).

A test-enhanced learning program can be successfully implemented in a classroom setting. Results are consistent with the notion of desirable difficulty: more effortful learning conditions (e.g., post-test) produce larger long-term benefits than less effortful learning conditions (e.g., pre-test).⁴ Educational implications: Quizzes can be used as a method to enhance long-term learning.⁵

REFERENCES


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