Using Tests to Promote Retention of Information Acquired While Watching a Video

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Background

Tests assess students' knowledge of course-related material. They also promote long-term retention of that knowledge and reduce forgetting, a finding referred to as the testing effect.

Is there a difference on final test performance between participants given an initial test and those who are given additional study time instead of a test?

Two theories make different predictions (4):

Amount of Processing Approach: Testing effect occurs because people who take a test after being exposed to the to-be-learned material simply spend more study time on the material than people who only take the final test.

Retrieval Approach: Testing effect occurs because the testing serves to "reactivate and operate on memory traces either by elaborating mnemonic representations or by creating multiple retrieval routes to them."

Predictions:

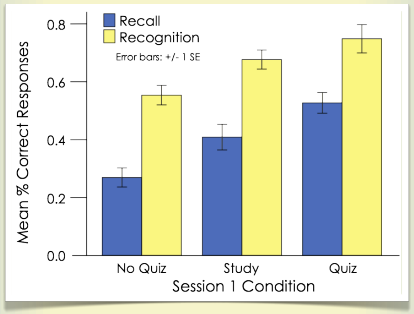
- Students in the initial test and extra study conditions will perform better on the final test than students in the control condition (1,2,3).
- Students in the initial test condition will perform better on the final test than students in the extra study condition (4).
- Benefits of testing students shortly after watching a video will be restricted to items they successfully retrieved on the initial test (5).

Method:

Participants:

Forty-five students enrolled in lower-division undergraduate psychology courses.

Session 2 Mean Percent Correct Responses as a Function of the Three Conditions Manipulated in Session1



Procedure:

- Students watched a video on judgment and decision making (6) in a classroom and worked on a distraction task for 5 minutes.
- Three conditions:
  - **Quiz condition**: students completed an initial cued recall and recognition test on the video content. They received no feedback on their test performance.
  - **Study condition**: students read through a study sheet that included the same content as the initial test, but the answers to the questions were provided as part of the text.
  - **Control condition**: students did not take an initial test or read the study sheet.
- Students returned 2 days later and completed a cued recall and recognition test.

Results:

- **Cued Recall Test**

Percent correct responses on the final test differed across conditions.

- Students in the quiz condition performed better than students in the no-quiz condition.
- Students who were provided a study sheet performed better on the final test than students in the no-quiz condition.
- Students performed better in the quiz condition than students in the study condition.

- **Recognition Test** (Multiple Choice)

Percent correct responses on the final test differed across conditions

- Students in the quiz condition performed better than students in the no-quiz condition.
- Students who were provided a study sheet performed better on the final test than students in the no-quiz condition.
- Students' performance in the quiz and study conditions did not significantly differ.

Conclusions & Implications:

- Replicated the testing effect using video stimulus material (1).
- Students who studied a review sheet after watching the video scored better on the final retention test than students in the control condition (1, 2, 3).
- Re-exposure to material does not produce the same long-term retention benefits as taking a test shortly after exposure to the to-be-learned material (1, 2, 3, & 4).
- The benefits afforded by testing students shortly after watching a video are restricted to items that they had successfully retrieved on the quiz (5). (Results not shown here)
- Giving a test shortly after watching the video promotes long-term retention even when no performance feedback is given and when students are not given opportunity for further study (4)

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