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

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).

Participants:

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

Method:

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).
- 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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