

ORIGINAL ARTICLE

Open Access



How to activate students' natural desire to test themselves

Kalif E. Vaughn¹ and Nate Kornell^{2*} 

Abstract

Testing oneself (i.e., doing retrieval practice) is an effective way to study. We attempted to make learners choose to test themselves more often. In Experiment 1, participants were asked how they wanted to study and were given four options: retrieval with no hint (e.g., idea: _____), a two-letter hint (e.g., idea: s____r), a four-letter hint (e.g., idea: se____er), or a presentation trial (e.g., idea: seeker). They tested themselves on the majority of trials. In Experiment 2, when the hint options were removed, they chose restudy rather than pure test on the majority of trials. These findings show that people prefer self-testing over restudy as long as they can get the answer right on the test. However, we would not recommend hints if they impaired learning compared to pure testing. Experiment 3 showed that this was not the case; the three retrieval conditions from Experiment 1 led to equivalent amounts of learning, and all three outperformed the pure presentation condition. We used different materials in Experiment 4 and found that the hints made retrieval slightly less beneficial when the hints made it possible to guess the answers without thinking back to the study phase (e.g., whip: pu____sh). In summary, hints catalyzed people's intuitive desire to self-test, without any downside for learning, thus making their self-regulated study more enjoyable and effective.

Keywords: Self-testing, Hints, Memory

Significance

Self-testing represents a beneficial learning strategy, and we sought to make students want to self-test more often. We utilized hints to make self-testing more desirable. In Experiment 1, participants were able to choose from a pure test trial (idea: _____), a two-letter hint (idea: s____r), a four-letter hint (idea: se____er), or a pure study trial (idea: seeker). They tested themselves on the majority of the trials, but this preference was reversed in Experiment 2 when we removed the hint options. Experiment 3 demonstrates that these hints do not decrease learning insofar as the target is not guessable. When the target is guessable, the hints make the test trials less effective (Experiment 4). Overall, this research demonstrates that learners prefer self-testing when the tests are made more palatable with hints. Furthermore, these hints do not decrease learning if the target is unguessable. Without hints, students avoid self-testing; with hints, students are more likely to self-test, find self-

testing more enjoyable, and learn just as much as testing without hints.

How to activate students' natural desire to test themselves

Can you name the eight US states whose names begin with the letter N?¹ How about the eight that start with M?² Do you know the name of Batman's butler?³ Draco Malfoy's aunt?⁴ Thor's hammer?⁵ Nirvana's drummer?⁶ The family in *The Incredibles*, *The Godfather*, or *The Sound of Music*?⁷ And what musical groups popularized the song *Colors*, *Black*, *Behind These Hazel Eyes*, *Blue Suede Shoes*, *Brown Eyed Girl*, *Purple Rain*, *Mellow Yellow*, *Green Onions*, *Pink Moon*, *Black Dog*, *Blackbird*,

¹Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, and North Dakota.

²Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, and Montana.

³Alfred.

⁴Belatrix LeStrange.

⁵Mjolnir.

⁶Dave Grohl.

⁷Parr, Corleone, von Trapp.

* Correspondence: nkornell@gmail.com

²Department of Psychology, Williams College, Williamstown, MA, USA
Full list of author information is available at the end of the article