Investigating How Learners Correct Mistakes: The Influence of Feedback Timing

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Abstract # 5175

Introduction

Mistakes can benefit subsequent learning of correct information more than just studying

Compared to just rereading or relistening to lectures for the same equivalent amount of time (Kornell et al., 2008; Kornell et al., 2009).

The timing of feedback after an error might moderate the effectiveness of guessing over studying

Experiment 1:
Does the timing of feedback depend upon retrieval success?

Experiment 2:
Why might immediate feedback be especially important after errors?

Experiment 3:
Testing the mediator theory

Research

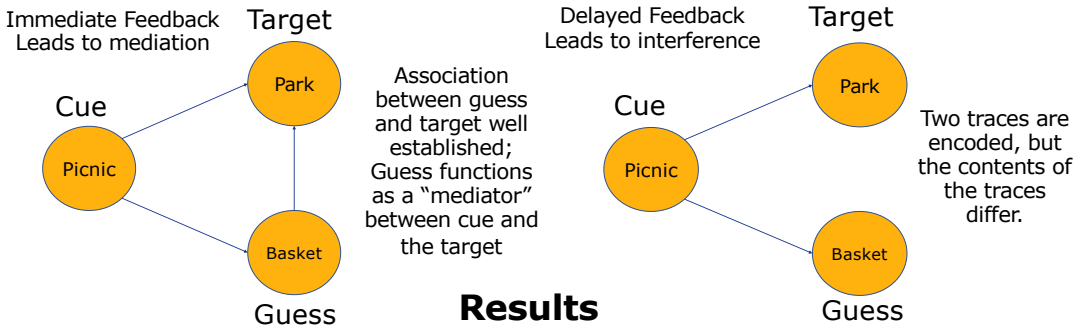
Material

Cue	Target
picnic	park
bird	feather
tooth	mouth
blanket	pillow

General Procedure

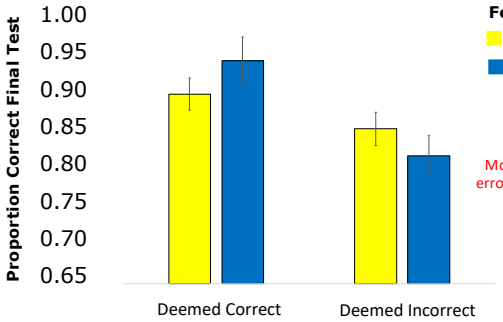
1. **Guess** Correct Vs Incorrect
2. **Feedback** Immediate or Delayed
3. **Final Test** Original Cue Vs Original Guess as Cue

Experiments 2 and 3 Hypotheses



Results

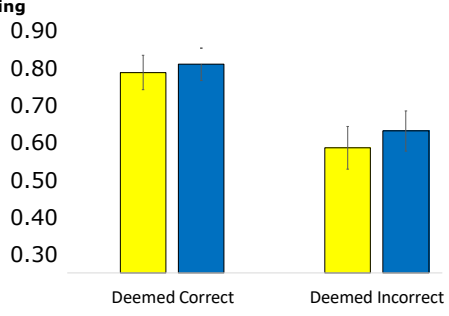
Ex. 1 (N = 66)
Original Cue as Final Cue



More commission errors despite better memory

Interaction between feedback timing and learning condition is significant:
$F(1, 254) = 8.077$, $p = 0.005$, $\eta^2 = 0.031$
Main effect of Learning Condition:
$F(1, 254) = 35.138$, $p < 0.001$, $\eta^2 = 0.124$
No Main effect of Feedback Timing:
$F(1, 254) = 0.152$, $p > 0.05$

Ex. 2 (N = 65)
Original Guess as Final Cue



Interaction between feedback timing and learning condition is non-significant:
$F(1, 66) = 1.18$, $p = 0.28$, $\eta^2 = 0.02$
Main effect of Learning Condition:
$F(1, 66) = 61.88$, $p < 0.001$, $\eta^2 = 0.26$
No Main effect of Feedback Timing:
$F(1, 66) = 1.32$, $p = 0.25$, $\eta^2 = 0.02$

Conclusion

The optimal timing of feedback depends on retrieval success. The benefits of immediate feedback after an error is not likely due to errors acting as steppingstones

How specifically is memory malleable after retrieval?

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Abstract

This study investigates the impact of the timing of corrective feedback on learning from mistakes. Educators and students are often afraid of making mistakes during the learning process, but mistakes are unavoidable when learning novel materials. In this research, participants learned 24 weakly related word pairs (e.g., blanket—picnic) and guessed the corresponding target before they were shown the corrective feedback immediately or at a 5-minute delay. During the final test, participants had to recall the correct target either from the cue (e.g., blanket—???) or their original guess (e.g., bed—-???), which was used to test the errors-as-mediators account, suggesting that errors lead to an additional retrieval pathway (cue→error→target) that aids learning from corrective feedback. Surprisingly, on the original guess as a cue final test condition, recall performance was similar regardless of the timing of the feedback, which is inconsistent with the errors-as-mediators account. Although the question of how people correct their mistakes while learning continues, the study concludes that immediate corrective feedback is most effective when learning from mistakes.