Ref ramming Eff ort to Improve Learners’ Study Strategy Choices

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Background
Interleaving is effective, but underappreciated
(Kornell & Bjork, 2008; Yan et al., 2016)

- BLOCKED
- INTERLEAVED

Final test: 35% 61%

..., in part, due to misinterpreted effort.
(Kirk-Johnson et al., 2019)

But, how effort is framed may matter.
Koriat et al. (2014) found that the relationship between effort and perceived learning was negative when framed as “required” by the learning material, but positive when framed as the learners’ choice to invest into learning.

Methods
Participants: 173 participants recruited from undergraduate subject pool. Randomly assigned to “effort-as-required” (n = 86) or “effort-as-voluntary” (n = 87) conditions for the main study/questionnaires.

Materials: Two sets of artist paintings (realistic, stylistic). Each set consisted of 4 artists x 12 paintings (8 for study phase, 4 for final test).

Did framing affect strategy perception and choice?

Perceived effort 

- 0.37***
- 0.8*** (0.02)

Perceived learning

- 0.20***
- 0.1*** (0.01)

Did size of interleaving effect matter?


effort-as-voluntary framing, the larger the

effortful interleaving, the larger the

Perceived effort:

- more effortful interfering was perceived to be → the less effective interleaving was perceived to be → less likely to choose interleaving
- more effortful interfering was perceived to be → more effective interleaving was perceived to be → more likely to choose interleaving

Perceived learning:

- more effective interleaving was perceived to be → higher effort ratings in the “required” condition compared to the “voluntary” condition, t = 1.29.

Unfortunately, the framing changed the ratings of perceived effort: Interleaving was given higher effort ratings in the “required” condition compared to the “voluntary” condition, t = 1.29.

People thought blocking was both more effective and chose it more often compared to interleaving.

SUMMARY AND CONCLUSIONS

1. In the effort-as-voluntary condition, the more effortful participants felt interleaving was, the more likely they felt they learned when using it, and the more likely they were to choose to interleave in the future. This pattern was the reverse of that found in the effort-as-required condition.

2. HOWEVER, the effort framing manipulation was not sufficient to affect perceived learning or study strategy choice. Participants still overwhelmingly preferred blocking despite learning and performing better using interleaving.

3. Future studies may investigate whether different or additional manipulations might be more effective in altering study strategy choice, or if the effort framing manipulation might be more effective regarding a separate set of study strategies with less inherent bias surrounding it (e.g. rereading vs retrieving information).

References
Yan, V. X., Bjork, E. L., & Bjork, R. A. (2016). On the difficulty of negative when framed as “required” by the

Koriat et al., 2016; Kornell & Bjork, 2008; Yan et al., 2016)

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