The Effects of Effort Mobilization on Attention and Learning During Online Lectures

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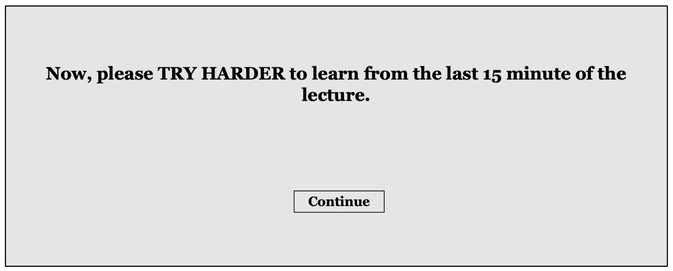
Background

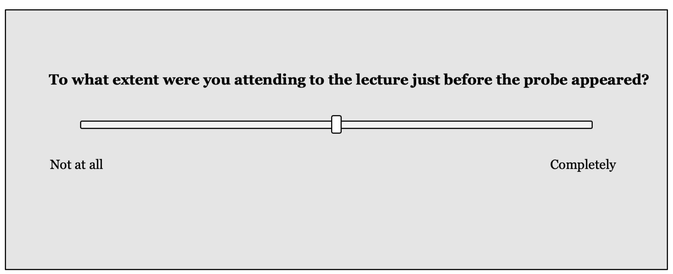
- Attentional engagement often diminishes overtime as students view online lectures (Risko et al., 2012).
- In this study we explored whether motivating participants to mobilize their effort to pay more attention ('effort mobilization'; Unsworth et al., 2022) part way through an online lecture would improve their attention for the remainder of the lecture.

Methods

- 114 undergraduate participants (M_{age} = 21.3 yrs. , SD = 6.39) completed the study online.
- Participants were randomly assigned to one of two groups; the experimental 'try-harder' group and the control group.
- Participants watched a 44-minute online physiological psychology lecture pertaining to various aspects of sleep.
- At the 30-minute mark in the lecture
  - The control group was presented with a screen that instructed them to click "continue" to proceed with the lecture.
  - The experimental group received a prompt that instructed them to "try-harder."



- Nine thought probes were placed intermittently throughout the lecture with 6 occurring before the prompt and 3 occurring after:

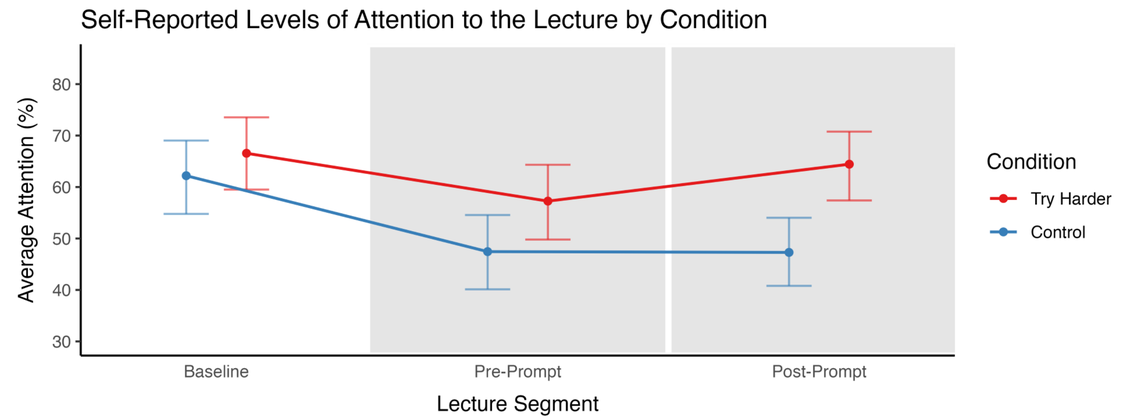


- At the conclusion of the lecture participants were asked to complete 17 multiple choice questions that pertained to the lecture material.
- Participants also answered post-task questions, with the experimental group being asked about their attention and effort following the 'try-harder' prompt.

Results

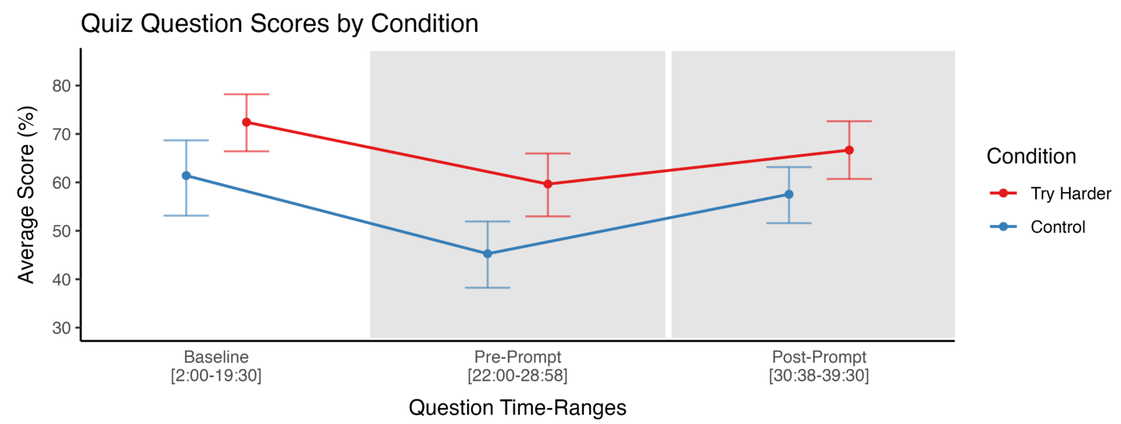
Self reported levels of attention following the 'Try-harder' prompt:

- Attention levels were significantly higher for the 'try-harder' condition than the control condition after the prompt ($p < .01$, $d = 0.59$) and this difference was significantly larger than the difference before the prompt ($p < .05$, $\eta_p^2 = 0.05$).



'Try-harder' prompt and performance on a memory quiz:

- There was a significant difference in overall quiz performance between the conditions ($p < .01$, $d = 0.44$). However, there was no interaction between condition and prompt (pre & post).



Conclusions

- The 'try-harder' motivational prompt improved subjective attention levels following the prompt; however, this did not translate to improved performance on a memory quiz.

References: Risko, E.F., Anderson, N., Sarwal, A., Engelhardt, M. and Kingstone, A. (2012). Everyday Attention: Variation in Mind Wandering and Memory In a Lecture. *Applied cognitive psychology, 26*, 234-242.; Unsworth, Miller, A. L., & Aghel, S. (2022). Effort Mobilization and Lapses of Sustained Attention. *Cognitive, Affective, & Behavioral Neuroscience*, *22*(1),42–56. https://doi.org/10.3758/s13415-021-00941-6

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