Introduction

- 72% of students report using laptops in the classroom (Patterson & Patterson, 2017).
- Laptops allow students to take more organized, as well as comprehensive notes (Gulek & Demirtas, 2005); however, Mueller and Oppenheimer (2014) reported that taking notes using a laptop results in shallow processing of the material, ultimately impairing performance.
- Barrett et al. (2014) found state-dependent learning effects when note-taking conditions matched test-taking conditions using all open-ended questions for a quiz given immediately after lecture material.
- The goal of the current study was to examine state-dependent effects for factual and conceptual questions on a quiz given two days after the material was presented.
- A 2 (note-taking method: by hand or laptop) x 2 (quiz method: by hand or laptop) between subjects design:

Method

Participants
- Sixty-six undergraduates with a mean age of of 19.27 years (SD = 1.23) completed the current study; 31 self-identified as male and 35 self-identified as female.

Materials
- Four 15-17 minute long TED Talks
- 10 question quiz, made up of five factual and five conceptual questions.
- Factual questions relied on information taken directly from the video.
- Conceptual questions required application of lessons from the video to new situations.
- Note pads and laptops

Procedure

- Participants were instructed to take notes as they would for class by hand or using a laptop.
- 48 hours later, participants studied their notes for 10 minutes before completing a quiz on the video they watched, either by hand or on a laptop.
- These quizzes were scored and the number of words in each participants’ notes was recorded for analyses.

Results

Overall Score

- The current study provides additional support for the idea that taking notes by hand improves performance as compared to taking notes using a laptop.
- Using a laptop may result in shallow encoding of the material. Participants typed more words ($M = 248, SD = 112$) than they could write by hand ($M = 162, SD = 44$), $t(63) = 4.09, p < .01$
- Unlike Barrett et al. (2014) we failed to find state-dependent effects:
  - Immediate vs. delayed quiz
  - Type of material in the lecture
  - Type of questions on the quiz

Discussion

- The current study provides additional support for the idea that taking notes by hand improves performance as compared to taking notes using a laptop.
- Using a laptop may result in shallow encoding of the material. Participants typed more words ($M = 248, SD = 112$) than they could write by hand ($M = 162, SD = 44$), $t(63) = 4.09, p < .01$
- Unlike Barrett et al. (2014) we failed to find state-dependent effects:
  - Immediate vs. delayed quiz
  - Type of material in the lecture
  - Type of questions on the quiz

References


