

ABSTRACTS

Is writing, typing or reading a better way to learn?

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This study aims to compare writing, typing and reading and their effects on learning. Research by Oviatt (2013) compared four different inputs to solve inference problems including non-digital and digital, pen and tablet interfaces. Correct inferences averaged 10.5% higher when using a digital pen interface compared with tablets. Mueller & Oppenheimer (2014) compared laptop note taking versus longhand on recall and found laptops notes led to worse performance on conceptual questions. Results suggest laptop users tend to copy verbatim with shallower processing. Bui, Myerson, & Hale (2013) compared writing notes versus laptop typing. Typing led to better immediate free recall, but writing led to better performance in a surprise, delayed test. However, typing was superior when students studied notes for a repeat test. These studies suggest benefits associated with writing which from a cognitive load (CL) perspective relate to the embodied effects associated with forming characters. Our study extends previous research with a focus on copying information verbatim to attempt to isolate the effects of writing versus typing, with reading as a control.

We hypothesize writing will lead to better learning than typing. Because writing involves creating characters while typing simply involves pressing keys, we suggest writing is more embodied and may thus reduce CL. We further hypothesize that reading may best for recall of information as writing and typing may be redundant when focusing on recall.

Three groups of 20 University students were instructed to either Read, Write, or Type while learning about the unfamiliar topic of Icelandic Geography. All participants received equal learning time. Participants were given writing and typing pretests to ascertain proficiency. Recall was tested using a combination of written, typed, verbal and multiple choice questions, so no learning condition was favored.

An ANCOVA was conducted to look for differences between Method of Study on Total Test Score, controlling for writing pre-test word count. There were no significant differences between students who learnt the information using Writing versus Typing, while Reading proved to be significantly better at facilitating learning compared to Writing, $F(2, 56) = 4.52, p < .05$.

Results suggest that asking students to either type or write may be redundant for verbatim learning. Contrary to previous studies there were no writing versus typing benefits, which may be because the test focussed on recall rather than conceptual or inferential questions. Moreover, students were much more proficient at typing than writing which may have effected results. Furthermore, although typing may require more CL as it is additional to reading, with high typing expertise this load may disappear. Future studies should use a more diverse range of participants with less typing expertise, and should test for skills beyond simple recall.