

The impact of handwriting and typing on the reading acquisition process: A study with an artificial orthography

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ABSTRACT

Although there is evidence for a negative impact of typing on letter learning in prereaders, it is less clear how writing letters and words by hand or by typing affects the reading acquisition process. One possibility is that the recruitment of phonological recoding processes inherent to writing experience is attenuated when typing. To test this issue 25 children learned a set of artificial letters and words copying then by hand while listening to their pronunciations. 25 children learned the same letters and words by typing them in a computer. Both groups were assessed on three abilities reflecting different stages of reading acquisition: a) naming the learned letters, b) decoding novel words made up with the trained letters, and c) visually identifying the novel words. Children in the handwriting condition showed better performance in the letter naming, word decoding and visual word identification tasks, and only in this group children's phonological skills predicted learning outcomes. A regression analysis revealed that children's word decoding accuracy was associated to word identification outcomes in the handwriting group, while in the typing group this relation was absent. These findings suggest that writing letters and words by hand contributes to the implementation of phonological recoding skills that are foundational for the formation of accurate representations of words in memory.

Keywords: handwriting, typing, reading acquisition, literacy development