

Malpique, A., Valcan, D, Pino-Pasternak, D., & Ledger S. (June, 2022). *Effect sizes of handwriting and keyboarding on the writing and reading performance of K-6 students: A meta-analysis of the last 20 years*. Paper presented at SIG Writing Biennial Conference, European Association for Research on Learning and Instruction (EARLI).

Abstract

In today's increasingly digital world, in many classrooms across the globe students are expected to comprehend and produce handwritten and computer-generated texts as early as in kindergarten. Hence, a growing body of research is now dedicated to comparing the effects of handwriting and keyboarding on the writing outcomes of primary aged children, substantiated by the relationship between transcription skills and writing performance (Feng et al., 2017). In this study, we present a meta-analysis integrating findings of international studies published during the last 20 years comparing the effects of handwriting and keyboarding on the writing and reading performance of primary-aged students. We addressed the following two main research questions: (1) What are the comparable effects of handwriting and keyboarding on the writing performance of K-6 students (i.e., letter writing automaticity, written word production, and writing quality)? (2) What are the comparable effects of handwriting and keyboarding on the reading performance of K-6 students? Additionally, we investigated whether grade level, keyboarding experience, timed measurement of letter writing, types of tasks measuring letter writing fluency, and study design moderated the effects of handwriting and keyboarding on writing outcomes. Results revealed that the effect size comparing quality of writing between handwriting and keyboarding was significant, with students producing better quality passages via handwriting than keyboarding. Results also revealed that only grade level significantly moderated the effect size for letter writing fluency and written word production. Findings further suggested that handwriting and keyboarding practices are associated with improvements on specific reading skills in primary education (i.e., letter recognition, letter naming, word reading, non-word recognition), but with no clear superiority of modality of writing practice on reading outcomes. We will discuss implications of this study's findings for literacy research and for the teaching of literacy in primary education.