

# Handwriting Study Summary:

Evaluation of Eleventh Grade  
Students' Writing Supports  
Teaching Italic Handwriting

Betty Duvall, 1985



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## Study Summary

At the end of the study, no student used the manuscript (ball-and-stick) handwriting that they had been taught, and only 13% of students used the cursive handwriting that they had been taught. Although no students had been taught italic handwriting, 47% of students wrote in either italic print or italic cursive styles: suggesting that these styles are more easily acquired and used by students, and therefore may be more likely be retained after instruction, as compared with more widely marketed commercial handwriting products.



**0%**  
of students  
used the  
taught  
manuscript  
handwriting



**13%**  
of students  
used the  
taught  
cursive  
handwriting



**47%**  
of students  
used  
untaught  
italic print or  
untaught  
italic cursive

## Method

Handwriting samples of 756 grade 11 students, who had been taught Zaner-Bloser manuscript and cursive handwriting for 9 years, were evaluated by two judges to identify what type of cursive writing the students used. Samples were reevaluated by both judges until complete consensus was reached.

**756 Students Grade 11**  
Great Falls Public Schools,  
Montana

**9 Years of Zaner-Bloser Instruction**  
Manuscript and Cursive

**2 Writing Sample Evaluators**  
Evaluation until reached consensus



## Results

Of the students whose samples were analyzed, 101 used cursive, 252 used straight (vertical) cursive, 0 used manuscript, 101 used italic, print, 23 used backhand, and five used block print. Students who used cursive handwriting were five times more likely to use a form of cursive other than the style they had been taught (Zaner-Bloser cursive). “Although no students had received instruction in italic, 47% of students in the study wrote italic cursive or italic print and nearly 2.5x as many students wrote italic cursive as the commercial style they were taught” (Duvall, 1985, page 6). The author concluded that students who have been taught manuscript and cursive handwriting styles do not write as they have been taught.

Type of Handwriting Used	Number of students
Cursive	101
Straight cursive	252
<b>Italic cursive</b>	<b>249</b>
Roundy cursive	25
Manuscript	0
<b>Italic print</b>	<b>101</b>
Backhand	23
Block Print	5

## ESSA Level Rating

### Tier 3: Promising Evidence

This study shows promising evidence that italic handwriting instruction correlates with higher levels of retention than other forms of handwriting instruction.

## Limitations

This study is a correlation study and cannot be used to determine causation. Full statistical measures were not used, and therefore the statistical significance of the findings cannot be evaluated. Instructional variables and fidelity were not recorded or controlled for in this study, so it is impossible to isolate the experimental variables.

### References:

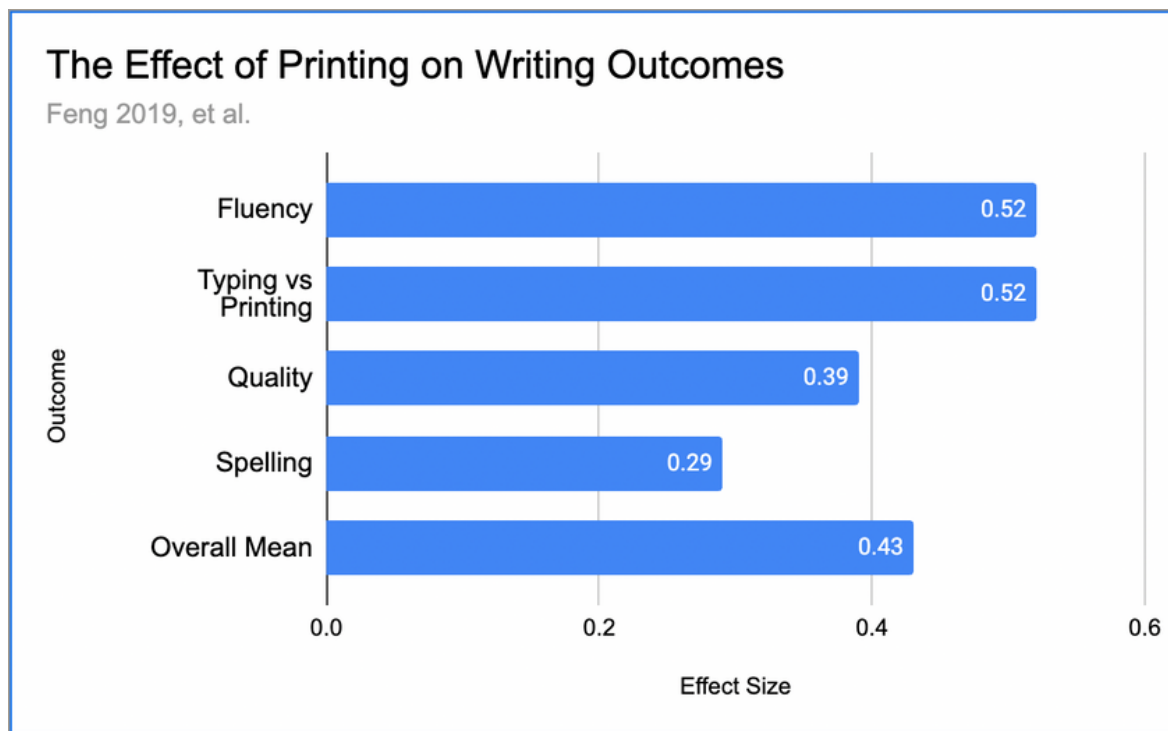
Duvall, B. (1985). Evaluation of eleventh grade students' writing supports teaching italic handwriting. Non Journal. <https://eric.ed.gov/?q=betty+duvall&id=ED263608>



## What does the Meta-Analysis Research Show?

In 2015 Tanya Santangelo & Steve Graham conducted a meta-analysis of 80 experimental and/or quasi-experimental K-12 studies on handwriting instruction. Their paper showed that handwriting instruction had a large positive impact on writing instruction outcomes, with a mean effect size of 0.81 and that handwriting instruction improved students' writing fluency, stamina, quality, and legibility. Santangelo (2015) also examined what types of instructional factors most improved handwriting outcomes. They found that technology-based instruction, individualized instruction, and the use of self-evaluation had the largest impact on handwriting outcomes. Comparatively they found that multi-sensory instruction and motion models provided minimal benefits for handwriting outcomes. Figure 1 shows the (Santangelo, 2015) outcomes ordered by effect size.

**Figure 1.** (Santangelo & Graham, 2015) Handwriting Outcomes.



In 2017 Luxi Feng, Amanda Lindner, Xuejun Ryan Ji & R. Malatesha Joshi conducted a correlational meta-analysis of 19 K-12 correlation studies related to handwriting or typing. Their paper showed that handwriting outcomes correlated with writing fluency, writing quality, and spelling, with an overall effect size of 0.43.



## Handwriting and Reading Outcomes

The meta-analyses by (Santangelo, 2015) and (Feng, 2017) strongly suggest that handwriting instruction benefits writing outcomes in general. That said, it is widely theorized that handwriting instruction also benefits reading outcomes. While there is less scientific evidence to support this theory, there has been some recent promising research. In 2021, Karen Ray, Kerry Dally, Kim Colyvas and Alison E. Lane conducted an 8-week-long quasi-experimental study, on kindergarten students comparing phonics and handwriting instruction to “business as usual” phonics instruction. The authors concluded that their experiment proved the efficacy of handwriting instruction for reading outcomes, as the treatment group improved their reading scores. The treatment group showed a positive effect size of 0.88 for letter-name knowledge and 0.54 for word reading. The authors did not find a meaningful effect for nonsense word reading or for letter-sound knowledge.

There has also been some research to indicate that there may be a possible neurological mechanism to account for why handwriting instruction might be beneficial for reading outcomes. For example, a 2012 MRI study by Karin H. James and Laura Engelhardt compared the impact of tracing letters, vs handwriting letters, vs typing letters, on brain activation for 5-year-old students when viewing the same letters. The authors concluded “A previously documented ‘reading circuit’ was recruited during letter perception only after handwriting—not after typing or tracing experience. These findings demonstrate that handwriting is important for the early recruitment in letter processing of brain regions known to underlie successful reading.”

### What Style of Handwriting is Best?

A 9-year-long correlation study by Betty Duvall (1985), looked at retention rates for different manuscript and cursive writing styles. The study included 756 grade 11 students who had received manuscript cursive writing instruction since grade 3. “Although no students had received instruction in italic, 47% of the students wrote italic cursive or italic print and nearly 2.5 times as many students wrote italic cursive as wrote the commercial cursive style they had been taught.” Duvall therefore concluded that there was a logical rationale to teach italic handwriting.

#### References:

Duvall, B. (1985). Evaluation of eleventh grade students' writing supports teaching italic handwriting. Non Journal. <https://eric.ed.gov/?q=betty+duvall&id=ED263608>

Feng, L., Lindner, A., Ji, X.R. et al. The roles of handwriting and keyboarding in writing: a meta-analytic review. *Reading and Writing*, 32, 33–63 (2019). <https://link.springer.com/article/10.1007/s11145-017-9749-x>

Ray, K., Dally, K., Colyvas, K., & Lane, A.E. (2021). The effects of a whole-class kindergarten handwriting intervention on early reading skills. *Reading Research Quarterly*, 56(S1), S193– S207. <https://ila.onlinelibrary.wiley.com/doi/abs/10.1002/rrq.395>

Santangelo, Tanya & Graham, Steve. (2015). A comprehensive meta-analysis of handwriting instruction. *Educational Psychology Review*, 28. <https://doi.org/10.1007/s10648-015-9335->

