



Connecting Handwriting to the Science of Reading

Based on an EDVIEW360 Podcast Conversation with Laura Stewart

Handwriting is back in the curriculum after a long absence. Educators now understand teaching handwriting explicitly is firmly linked to reading and spelling achievement. Although it never disappeared totally, it was de-emphasized in most districts. But it's now clear handwriting plays a critical role in literacy and is making a comeback.

There have been a few different waves in handwriting trends over the years. The first wave was the ascendancy of whole language which minimized handwriting. The emphasis was getting students to write for expression and meaning. At the time, the thinking was that if educators emphasized handwriting, somehow it would get in the way of this expression. Also, there was the idea back then that educators had to choose and they didn't have time for both. So, handwriting was relegated to a learning center or maybe a take-home sheet, but it really didn't get the instructional attention it needed.

The second wave happened when schools started teaching keyboarding. At the time, the thinking was educators needed to spend handwriting time on keyboarding skills, and so handwriting was de-emphasized.

The Handwriting Connection to Reading and Writing



Listen to the EDVIEW360 podcast, *How Handwriting Supports the Science of Reading*, [here](#).

First, there is the legibility issue. For example, 38 million illegibly addressed letters cost the U.S. postal service more than \$4 million a year and more than twenty percent of hospital orders are returned by pharmacies as illegible. But the big realization that caused us to pay more attention is we recognize it's critical to automatize handwriting as a transcription skill. It frees up working memory to devote cognitive energy to composition. It's like when we think about making decoding automatic and building the storehouse of instantly recognizable words so our brain energy can be devoted to comprehension.

Researchers have now found automatized handwriting improves the quality and quantity of written expression. So, when we de-emphasized handwriting and expected it would impede written expression, we've had it all wrong. We were completely off the mark.

When we write, we're dealing with a lot of simultaneous demands. What do we want to say? How do I organize my writing? What do I need to do with each sentence? How do I spell that word? We're really taxing our working memory. To optimize composition, handwriting, and spelling, the mechanics need to be fluid and internalized.

A 2016 study found that second-grade students who had handwriting instruction showed advancement in language skills, alphabet writing, spelling, and composing.

This helps with the development of foundational reading skills. Then, there is research revealing how the areas of the brain activate during handwriting. Most of the activation is in the left hemisphere. The manipulation of thumb and fingers as we write activates the left brain, which we know manages planning, monitoring, organizing, revising, and language processing—skills critical to not just writing, but self-management and metacognition.

Making the Link Between Handwriting to the Science of Reading

"The science of reading is a vast, interdisciplinary body of scientifically based-research about reading and issues related to reading and writing."

By this definition, handwriting is *absolutely* connected to the science of reading.

However, the research is inconclusive about teaching manuscript vs. cursive. The prevalent practice seems to be manuscript or printing in grades K–2 and cursive in grades 2–3. However, we know from research that children should not be taught both at the same time and it takes two years of instruction to automate a handwriting process, so we do have to choose. In this case, William van Cleave, an author and educational consultant, believes cursive is better for students with language-based difficulties because it decreases letter reversals.

Also, there's now enough information to know keyboarding does not have the same benefits as handwriting, so to think handwriting can be replaced with keyboarding is misguided. When students are keyboarding notes, they are trying to capture every word. But with longhand, you must be cognitively active in picking out key ideas, summarizing, and drawing conclusions by putting concepts in your own words. These are higher-order skills that require a level of cognition that benefits a student's retention of concepts.

Studies have shown college students who took notes by hand performed better on assessments than their peers who typed notes. Some researchers suggest the goal of writing instruction in the information age should be developing hybrid writers who are adept with multiple writing tools, including pens and keyboards.

A young student's first efforts with handwriting are intertwined with their development—the way they grasp the pencil at different ages, for example. Fine motor manipulation, like using fingers to pick up objects and manipulate objects, and learning basic strokes like vertical and horizontal lines, circles, and slants. These activities can be done with our youngest learners to help prepare them for more handwriting instruction.



Where To Go From Here

It's important to teach students what makes a letter legible and to do explicit modeling. But, it's also important to understand this doesn't have to take a lot of time during the school day. Educators have expressed concern and confusion about the amount of time handwriting instruction would take. Instruction and practice can be accomplished in 15 minutes a day: five minutes of explicit instruction; five minutes of guided practice with monitoring and coaching; and five minutes of independent practice and self-evaluation. That can be done as seat work during independent work time.

But more importantly, it's a great bang for the instructional buck, given all the benefits. It couldn't be more important, and it's a good investment of time. We encourage all educators to look at systematic programs and avoid downloading material from the Internet. Teachers should not have to figure this out for themselves. We want to put quality resources into teachers' hands to make their lives more manageable.

CONNECT TO PRACTICE

A study found 90 percent of first- through third-grade teachers teach handwriting and most agreed it is important. But only 12 percent believed they had adequate preparation to teach handwriting in their teacher preparation courses in college. Our goal is to serve as a partner to you as you support your students. *Step up to Writing*[®] is a robust writing instruction solution offered by Voyager Sopris Learning[®] that can help transform your students' skills and inspire them as writers. Here are five features to introduce you to the program:

- ✓ This solution is designed for K–12 learners of all levels and types and is compatible with any core curriculum.
- ✓ With a balance of explicit, systematic instruction and time spent producing works in each of the text types, *Step Up to Writing*[®] helps students understand the differences between writing styles, and hones their skills in each.
- ✓ Students master strategies through its multimodal instruction, which is engaging and motivating.
- ✓ This program provides hundreds of strategies to explicitly teach the types of writing students need to master to be proficient.
- ✓ This is an evidence-based, unparalleled, hands-on writing program with flexible implementation options.