

The simple act of teaching children to use cursive writing fluently and legibly can impact their ability to be successful. Years of research support that claim, which may sound old-fashioned in today's world. Yet, because success in today's classroom has a heavy emphasis on testing, it may be even truer today than it was 20 years ago when I first developed *Cursive Writing*.

At the time, my young, low-performing students in elementary school were not getting carefully designed practice or enough practice to develop good handwriting. I worked with Direct Instruction experts to author a program to teach children to write well in just 20 minutes a day. Yet, 20 years later, the amount of attention paid to regular penmanship instruction in elementary schools has not improved. In fact, the tendency has been to de-emphasize handwriting. This mistake has even more impact on students today.

Handwriting is important in children's development as writers.

Students need a legible, fluent style of handwriting to fully participate in writing. (Legibility is writing that can be easily and quickly read, while fluency is writing that can be easily and quickly written.) Numerous research studies have found that handwriting difficulties harm a child's development as a writer for a number of reasons:

- Individual differences in handwriting skills (most notably handwriting fluency) predict how much and how well children write.
- The building blocks of writing are alphabet letters. Writers need to access the letters rapidly in memory and to produce them automatically without conscious effort. Devoting more attention to the motor skills of handwriting strains students' processing capacity in working memory. They have less attention available for higher order skills, like planning, content generation, and revisions.

- Handwriting speed also accounts for a significant proportion of the variability in the children's compositions. A young writer's fluency with handwriting may not be enough to keep up with his or her thoughts, which interferes with generating content and recalling ideas or text in the working memory.
- Writers preoccupied with the motor skills of handwriting have less time to think deeply about their composition content. As they are laboriously writing, they may forget intentions and meanings that they meant to include. This results in writing that is less coherent, precise, and complex.
- Developing writers may not be able to stop paying a large amount of attention to motor skills. In fact, ignoring motor skills may take extra effort, interfering with their control of their own writing process.
- Over time, children with difficulties in handwriting can develop an approach to composing that minimizes the use of other writing processes, like planning and revising. They also may avoid writing and develop the belief that they cannot write, resulting in arrested writing development.

The link between handwriting and the quality of the written work is significant in both the compositional fluency and compositional quality models at the primary and intermediate grades.

It's interesting to note that handwriting fluency has a more direct and sizable relationship to writing skills for beginning and developing writers than spelling. The contribution of spelling to compositional quality is mainly indirect, though it correlates with handwriting fluency.

Poor handwriting skills impact note-taking, assignment completion, and test scores.

Children's handwriting competence also affects other aspects of classroom success. Multiple studies have found that it affects how long it takes children to complete written assignments and their ability to take notes during lectures.

This is even more serious for students who have learning disabilities. One 1998 study found, on the basis of handwriting fluency alone, students with learning disabilities require 50 minutes to complete a task that would take other students just 30 minutes to finish.

Even more significant, at least six studies have found that handwriting legibility influences the perceptions about a child's competence ... and the child's scores ... on tests of composition. This is a special concern

because standardized tests increasingly include a written essay that is scored by trained raters.

Over and over, teachers and other adults who evaluated two or more versions of the same essay that differed only in the handwriting gave higher marks to the papers written with neat, legible handwriting. Papers with identical content in poor handwriting get lower marks.

One example of the research is Sweedler-Brown's 1992 study in which 27 original essays were graded in three graphic modes: typed, nicely handwritten, and poorly handwritten. Nicely handwritten copies of the essays received significantly higher scores than the poorly handwritten or typed versions. There was no difference in the scores between the typed and poorly written versions, revealing a strong grader bias toward good handwriting.

Just 20 minutes a day makes the difference with well-designed instruction.

Cursive Writing was carefully designed to teach students who know manuscript writing – those in Grades 2–4 as well as older students with poor handwriting – how to form letters, write words and sentences, and write faster and more accurately in just 20 minutes a day.

The idea is to teach as few new skills as possible and to induce the greatest number of generalizations and the greatest amount of facility possible. In short, we use what the student already knows, modify known skills as little as possible, and provide a minimum of conventions that impede generalizations of skills.

Since the students already know how to form manuscript letters, the program prompts the student to use manuscript letters as the basis for cursive letter, not to learn entirely new conventions for cursive writing.

Two conversions occur: Cursive letters slant, and cursive letters are joined. To teach the joining conversion, the program first introduces those forms that are produced most directly by

adding tails to the front and back of the manuscript letters. By adding tails, the following letters are formed:

Manuscript		Cursive
g	=	<i>g</i>
a	=	<i>a</i>
j	=	<i>j</i>
l	=	<i>l</i>
m	=	<i>m</i>
x	=	<i>x</i>
n	=	<i>n</i>
p	=	<i>p</i>
q	=	<i>q</i>
t	=	<i>t</i>

The cursive counterparts of *e*, *l*, *q* and *y* involve slight changes in the shape of the middle part. Generally, however, there is a beginning tail, a manuscript letter form, and an ending tail. Some cursive letters, such as *s*, *r*, *b*, *f*, *k*, *s* and *z*, are not strict transformations from manuscript letters. Even for these, parts are the same.

Cursive Writing follows a logical sequence of instruction: teacher modeling, teacher-guided practice, and gradually faded prompts. It taps into practical teaching strategies with clear, consistent lesson formats that require minimal preparation time. The program:

- Models letter formation using simple stroke descriptions
- Helps students write new letters, one stroke at a time
- Increases writing speed through the practice of high frequency letter combinations and words
- Provides review of learned skills to promote mastery and build independence
- Uses a simplified font to reduce frills, making it easier for students to master strokes
- Provides gradually fading slant bars to prompt parallel slope and correct spacing
- Has timed practice sessions to develop fluency and automaticity

Explicit handwriting instruction is linked to improved composition.

If educators want to improve the writing of their students, they need to focus not just on the content, but on the handwriting. Explicit, supplemental instruction in how to form and fluently write the letters of the alphabet causes students to evidence improvement in both handwriting and compositional skills, multiple studies reported.

While some assume that handwriting can be ignored because of alternative modes of composing, such as word processing, beginning writers still do most of their composing by hand. Difficulties in developing these skills may lead to arrested writing development, particularly in compositional fluency.

In fact, Virginia W. Berninger and her colleagues see compositional fluency problems in the primary grades as the genesis for writing problems in the upper grades. Their theoretical framework conceptualizes learning to write as a process of creating a functional system that draws on multiple component processes.

Some processes are low level, including creating letter representations in memory, accessing and retrieving these representations in memory, motor planning, and motor production. Others are high level. These include strategies for planning, generating language at the sentence and text levels, and reviewing and revising written text. Berninger sees that goal as automatizing the low-level processes so that working memory resources are freed for the higher level constructive aspects of composing.

To study this effect, Berninger et al. (1997) has compositions produced by 600 students in Grades 1–6 typed so that raters, who were asked to rate the quality and count the number of words, did not have access to the students' actual handwriting. Structural equation modeling showed a correlation between the quality of composition and the quality of students' handwriting. These findings support the claim that handwriting exerts constraints on the text generation process in beginning writers.

Frequent, brief, explicit instruction helps young children automatize letter production and retrieve letter forms rapidly from memory. This increases the probability that they will become skilled writers. Berninger also predicts that explicit instruction in handwriting also results in children producing more written text within a constant time interval.

Writing instruction promotes success across the curriculum.

Multiple studies have found that difficulties with handwriting can affect students' persistence, motivation, and sense of efficacy. Students who learn to write legibly have an advantage that they can use for the rest of their lives. They feel competent when they master this skill, which they see used all around them.

A study by Berninger et al. (1997) testing hypotheses regarding handwriting instruction gives insight on the best ways to help students. The study randomly assigned first grade children experiencing difficulty in mastering handwriting to five handwriting instruction treatment groups and a phonological awareness control group that did not have explicit handwriting instruction.

In the end, all the handwriting treatment groups made greater handwriting gains than the control group. Although the students were learning manuscript letters instead of cursive writing, the treatment associated with the best performance was visual cues with memory retrieval. This approach is seen in *Cursive Writing's* stroke descriptions, which create an accurate, precise memory representation.

Steve Graham et al. (2000) expanded on this research when they examined the impact of supplementary handwriting instruction on the handwriting and writing performance of Grade 1 children who produced handwriting slowly and were also experiencing difficulty in learning to write. This extended the Berninger study by including children with and without disabilities. It also used multiple measures of writing performance and examined whether the effects of supplemental handwriting instruction were maintained over time.

The study found that, not only did supplemental handwriting instruction lead to greater gains in compositional fluency, students in the handwriting instruction group were more accurate in naming and writing the letters of the alphabet. They could produce the letters and copy-connected text more fluently. This resulted in both immediate and long-term improvements in the students' compositional fluency skills.

Explicit, multisensory instruction provides the best results.

B.A. Furner's three-year study of developing handwriting in children found that emphasizing multi-sensory stimulation, including the verbalization of procedures, was an effective means of instruction.

In contrast, programs that stress copying or tracing as the primary means of instruction are not designed to build these perceptual abilities. Instead, it's better to guide the children to observe the formation of the letter or procedure under study. The child must build a mental image of the letter or feature of writing skill involved (such as spacing or size), as well as how it is formed. This cannot be inferred from a still model presented in a copybook, worksheet, or chart.

Other research-based recommendations for teaching handwriting include:

- Provide many guided exposures to the stimulus to build perception. Teachers should guide the children to watch the formation of a letter several times, focusing on different aspects of the formulation process.
- Use methods of instruction that require a mental response, such as talking, from each child concerning the formational process, not just motor responses.
- Use multi-sensory stimulation. People seem to perceive best through varying modes, but all people respond best to multiple modes. It's important to use visual, auditory, and kinesthetic exposure, rather than just visual as provided by the model of the letter.
- Keep the emphasis in practice on comparison and improvement, rather than writing numerous samples.
- Beware the detrimental effects of extensive use of unsupervised writing or copy work as an independent activity until the child has developed good handwriting skills.

Providing explicit and direct handwriting instruction to help students learn cursive script will not eliminate the need for "on-the-spot teaching" during the rest of the school day, but it should reduce the number of established and developing difficulties that a teacher has to address.

Discovery is not an especially effective approach for learning handwriting. Handwriting is best taught in separate periods of direct instruction and teacher-supervised practice. Teachers can take a proactive stand to explicitly and directly help students establish the habits and patterns that facilitate the development of legible, fluent writing.

The results will have a positive impact on students for the rest of their lives.

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