



## Why Handwriting Remains a Critical Skill

### Handwriting in Today's Classroom

Today's elementary classroom has students producing more written work than ever before. To succeed with all their written assignments, students need to master handwriting.

Several research studies have found that handwriting is essential in higher grades, too. Students who took notes by hand versus on a computer were shown to have better comprehension of what was being said, and had more sustained attention during discussion of text and concepts (Mueller 2014, Peverly 2012).

### Handwriting and the Brain

Various research studies show the positive impact of handwriting on the developing brain. MRI scans at Indiana University (done before and after letter instruction) found that when children practiced by hand, their neural activity was far more enhanced and adultlike than those who had simply looked at their letters (James 2012).

Teaching handwriting has also been shown to have significant impact in the areas of the brain related to literacy development (Berninger 2012; James 2012). Research shows that handwriting is a foundational skill that can influence students' reading, writing, language use, and critical thinking (Saperstein Associates 2012). It has an important role in brain development, is necessary alongside technology in the classroom, and promotes success in other academic subjects.

### Handwriting Mastery Builds Academic Success in All Subjects

Handwriting fluency is an important component of early learning and communication. To help acquire knowledge and share or demonstrate what they have learned, elementary-aged children need to be able to handwrite automatically, with speed and ease.

When children are taught handwriting skills, they are able to focus on the content of what they are writing, rather than thinking about how to form their letters. When children acquire good handwriting skills, they write with speed and ease in all subjects (Marr et al. 2003). Greater writing speed will "lessen the burden on working memory," enabling them to "create good reader-friendly prose" (Peverly 2006).

Students who have mastered handwriting are better, more creative writers. (Graham and Harris 2005; Graham, Harris, and Fink 2000; Berninger 2012). Handwriting affects both fluency and the quality of the composition. Christensen (2005) demonstrated how children enrolled in an eight-week handwriting intervention program outperformed their peers in all measures of writing, achieving a 46 percent improvement in the quality of written text beyond the control group (as cited in Medwell and Wray 2007).

Research at Florida International University indicates that handwriting ability in preschool is a strong predictor of reading and math achievement in second grade. Handwriting provides children with the opportunity to create internal models for the symbol system necessary to succeed in academic disciplines (Dinehart 2013).

### Citations

- Berninger, Virginia. 2012. "Evidence-based, developmentally appropriate writing skills K to 5: Teaching the orthographic loop of working memory to write letters so developing writers can spell words and express ideas." Paper presented at Handwriting in the 21st Century? An Educational Summit, Washington, DC, January 23, 2012.
- Dinehart, Laura and Louis Manfra. 2013. "Associations Between Low-Income Children's Fine Motor Skills in Preschool and Academic Performance in Second Grade." *Early Education and Development* 24: 138-161.
- Graham, Steve, and Karen Harris. 2005. "Improving the Writing Performance of Young Struggling Writers: Theoretical and Programmatic Research from the Center on Accelerating Student Learning." *Journal of Special Education* 39 (10): 19-33.
- Graham, Steve, Karen Harris, and Barbara Fink. 2000. "Extra handwriting instruction: prevent writing difficulties right from the start." *Teaching Exceptional Children* 33 (2): 88-92.
- James, Karin Harman. 2012. "The neural correlates of handwriting and its affect on reading acquisition." Paper presented at Handwriting in the 21st Century? An Educational Summit, Washington, DC, January 23, 2012.
- Marr, Deborah, Sharon Cermack, Ellen Cohn, and Anne Henderson. 2003. "Fine motor activities in Head Start and kindergarten classrooms." *American Journal of Occupational Therapy* 57: 550-557
- Medwell, Jane and David Wray. 2007. "Handwriting: what do we know and what do we need to know?" *Literacy* 41 (1): 10-15.
- Mueller, Pam A., Daniel Oppenheimer. 2014. "The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking," *Psychological Science* Vol. 25 (6).
- Peverly, Stephen. 2012. "The Relationship of Transcription Speed and Other Cognitive Variables to Note-Taking and Test Performance." Presented at Handwriting in the 21st Century? An Educational Summit, Washington, DC, January 23.
- . 2006. "The Importance of Handwriting Speed in Adult Writing." *Developmental Neuropsychology* 29 (1): 197-216.
- Saperstein Associates. 2012. "Handwriting in the 21st Century? Research Shows Why Handwriting Belongs in Today's Classroom: A Summary of Research Presented at Handwriting in the 21st Century? An Educational Summit." [http://sapersteinassociates.com/data/2\\_29\\_HW\\_Summit\\_White\\_Paper\\_eVersion.pdf](http://sapersteinassociates.com/data/2_29_HW_Summit_White_Paper_eVersion.pdf)



## Handwriting Without Tears: A Proven Approach

A study conducted through the University of Indianapolis measured the effectiveness of Handwriting Without Tears among students in inner city first grade classrooms. Pre- and post-test results showed that Handwriting Without Tears was effective at improving memory, orientation, placement, size, start, sequence, control, and spacing skills (Hape 2014).

A 2011 study at East Carolina University used Handwriting Without Tears to measure skill improvement in pre-writing skills, kindergarten readiness, name writing, and fine motor skills. This study also used a pre- and post-test design, this time in a rural Head Start. Results found that the students using Handwriting Without Tears made significant improvements, and that adding the curriculum to a Head Start program would be beneficial for improving handwriting readiness skills (Lust).

A University of Kentucky study analyzed the effectiveness of the Handwriting Without Tears program by using the Minnesota Handwriting Assessment (MHA) for pre- and post-testing in a first grade classroom. The MHA assessed five quality categories of legibility: form, alignment, size, and spacing, along with assessing the students' rate of handwriting. The findings demonstrated that Handwriting Without Tears resulted in overall improvements in handwriting during the first grade school year. Furthermore, it supported the use of a multisensory approach to handwriting, like Handwriting Without Tears, to see improvements in your classroom (Schneck 2012).

In 2004, Owens demonstrated the positive effects of Handwriting Without Tears with students in inclusion classrooms. Students from her study demonstrated statistically significant improvement in the areas of letter size and spacing compared to students receiving traditional handwriting instruction. Teachers involved in this study were overwhelmingly satisfied with the curriculum's effectiveness and usability and continued to use the curriculum after the study was completed. Incorporating a developmental approach and instructional best practices, Handwriting Without Tears has shown effectiveness in improving handwriting skills for children of all abilities, including those with special needs (Guy 2003; Owens 2004).

---

### Citations

- Guy, Jodie. 2003. "Effect of proprioceptive input combined with Handwriting Without Tears on the handwriting of children with learning disabilities." Master's thesis. Western Michigan University, Kalamazoo, Michigan.
- Hape, Kristi, Nicole Flood, Kari McArthur, Chantal Sidara, Christina Stephens, and Kayla Welsh. 2014. "A Pilot Study of the Effectiveness of the Handwriting Without Tears® Curriculum in First Grade." *Journal of Occupational Therapy, Schools, & Early Intervention*. 7 (3-4): 284-293.
- Lust, Carol and Denise Donica. 2011. "Effectiveness of a Handwriting Readiness Program in Head Start: A Two-Group Controlled Trial." *Research Scholars Initiative*. 65 (5): 560-568.
- Owens, Lisa. 2004. "The effects of the Handwriting Without Tears program on the handwriting of students in inclusion classrooms." Master's thesis. Virginia Commonwealth University, Richmond, Virginia.
- Schneck, Colleen, Sharon Shasby, Christine Myers, and Michelle L. DePoy Smith. 2012. "Handwriting Without Tears versus Teacher-Designed Handwriting Instruction in First Grade Classrooms." *Journal of Occupational Therapy* 5 (1): 31-42.