



WILSON LANGUAGE TRAINING

Achieving Literacy for Life



Handwriting: It's More Important Than you Might Think!


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Handwriting: It's More Important Than You Think!

Handwriting is the use of the hand to produce units of written language – single letters, written words, sentences, and text – to express ideas and thinking.



(Berninger, 2012)

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Handwriting: It's More Important Than you Might Think!


Overview of Session

- Explore "Why Teach Handwriting"
- Difficulty with Writing
- Principles of Handwriting Instruction
- Current Trends
- Summary



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Why Teach Handwriting?



- To help learn letters/sounds for reading
- For Composition and Writing Fluency
- Frees brain for other things
- To Help with Memory and Learning
- Legibility Impacts Success

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Why Teach Handwriting?

The letters of the alphabet are not learned holistically.

(Adams, 1990)

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Why Teach Handwriting?

- The highly variable output of early free-form printing is likely a crucial component of emerging letter recognition and understanding. (James and Englehardt)

James, K.H., & Englehardt, L. (in press). The effects of handwriting experience on functional brain development in pre-literate children. *Trends in Neuroscience and Education*.

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Why Teach Handwriting?

- Handwriting enhances the learning of letters:
 - facilitates the automatic grouping of visual information into categories, which is crucial for the fast visual recognition of letter forms
 - fosters the development of specialized regions of the brain used for processing letters.

James, K.H., & Englehardt, L. (in press). The effects of handwriting experience on functional brain development in pre-literate children. *Trends in Neuroscience and Education*.

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Why Teach Handwriting?

- These conclusions are based on an emerging body of behavioral and neuroimaging research directly testing the impact of handwriting on letter knowledge and specialization in the brain.

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Why Teach Handwriting?

Children who learn letters through see-say-write methods engage in different neural processing and experience greater growth of activation in a specialized visual pathway of the brain than children taught letters through see-say methods.

- Conclusion: Specialization in an area of the brain associated with expert letter recognition and fluent reading is fostered by sensorimotor learning.

James, K.H. (2010). Sensori-motor experience leads to changes in visual processing in the developing brain. *Developmental Science*, 13, 279-288.

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Why Teach Handwriting?

?

Would learning to write with a keyboard before learning handwriting result in the same outcomes as learning handwriting?

Longcamp, M. et al. (2005). The influence of writing practice on letter recognition in preschool children: A comparison between handwriting and typing. *Acta Psychologica*, 119, 67-79.

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Handwriting Instruction

Children who are taught to handwrite letters have better letter recognition as a result of this instruction than do children who are taught to type letters.

- Conclusion: Letter writing facilitates the memorization of letters and their recognition.

Longcamp, M. et al. (2005). The influence of writing practice on letter recognition in preschool children: A comparison between handwriting and typing. *Acta Psychologica*, 119, 67-79.

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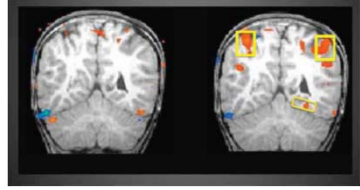
Handwriting Instruction

Learning letters through *see-write* methods results in different neural processing and greater neural activation in a specialized visual pathway and motor region than learning letters through *see-trace* or *see-type* methods.

James, K.H., & Engelhardt, L. (in press). The effects of handwriting experience on functional brain development in pre-literate children. *Trends in Neuroscience and Education*.
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fMRI Study

Comparison of pre-experimental (left side) and post-experimental (right side) brain scans in children.
(Red indicates that there is a significant difference in conditions. Blue indicates that there is no change in conditions.)



Using fMRI (functional Magnetic Resonance Imaging), Dr. James studied how letter printing affects the brain activation of children.

(James, 2012; Sapperstein Associates, 2012)

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fMRI RESULTS

RESULTS

- **After printing letters** (interacting with the letters to create context, rather than simply observing letters as objects), **brain activation in the children studied was significantly increased** and showed similarity to that of adults.
- When preschool children looked at and identified a letter, they did not exhibit the same brain activation as adults.
- In the brain's visual regions, when comparing writing, typing, tracing, and visual control, **much more activation was exhibited after the writing experience than any of the other experiences.**

(James, 2012; Sapperstein Associates, 2012)

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Why Teach Handwriting?

IMPLICATIONS

- Neuroimaging is a sensitive marker of learning changes.
- Knowing how a child's brain works should inform our educational practices.
- **The act of writing by hand makes a significant difference to brain activation patterns.**

(James, 2012; Sapperstein Associates, 2012)


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Why Teach Handwriting?

- The consensus across current behavioral as well as brain imaging data is that the cerebral representation of letters is not strictly visual, and is rather a complex neural network that includes a sensorimotor component acquired while learning concomitantly to read and write.
- Handwriting uniquely develops this distributed network of brain regions that are implicated in letter representations and reading.

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Why Teach Handwriting?



- To help learn letters/sounds for reading
- **For Composition and Writing Fluency**
- Frees brain for other things
- To Help with Memory and Learning
- Legibility Impacts Success

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Why Teach Handwriting?

“Fluent, legible handwriting goes hand in hand with the ability to write strong compositions.”

“Non-proficient hand writers cannot keep up with their ideas.”

(Graham, 2010)

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Why Teach Handwriting?

“Research shows that individual differences in handwriting predict amount and quality of composition”

(Gentry and Graham, 2010)



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Why Teach Handwriting?

Improving handwriting fluency among young children has led to general improvements in the fluency of text generation.

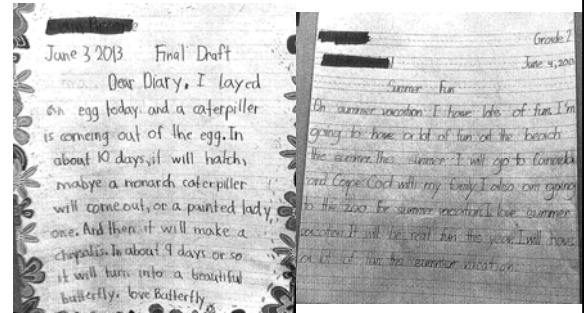


(Berninger et al, 1997
Graham, Harris, and Fink 2000)

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Samples



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“In grades 4 to 6, handwriting fluency still accounts for 42 percent of the variability in the quality of children’s writing, and students’ handwriting speed continues to increase at least until grade 9.”

Graham, 1998

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Why Teach Handwriting?



- To help learn letters/sounds for reading
- For Composition and Writing Fluency
- **Free brain for other things**
- To Help with Memory and Learning
- Legibility Impacts Success

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Why Teach Handwriting?

"Handwriting presents the biggest barrier students must overcome in learning to write. The focused thought that young writers must put into how to form letters interferes with other writing processes."


Virginia Berninger, 1999

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Why Teach Handwriting?

"To write a letter, a child must identify the letter by name, memorize the letter's form, and quickly access and retrieve this form from memory."


Lana Edwards, 2003



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Why Teach Handwriting?

When writing is automatic the brain is free to recall correct spelling and to develop ideas.



The brain is free to think!
No conscious effort is required!

(Birsh, 2011)

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Why Teach Handwriting?

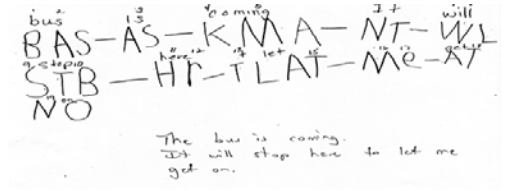
Handwriting needs to be at a spontaneous level to allow student focus on spelling, content, and organization.

(Berninger, 1997)

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Kylie's Grade 1 Writing Sample

SEPTEMBER



The bus is coming.
It will stop here to let me get on.

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Kylie's Grade 1 Writing Sample

NOVEMBER 24/27

Kylie

The ibus is cum

ni iwt wop hih

to lut ma gat

ona

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Kylie's Grade 1 Writing Sample

JANUARY 21/27

Kylie 1-22-03

Mom has gon

up to the shop

She whill get

nick and bed.

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Kylie's Grade 1 Writing Sample

JUNE

No help 6-16-03

Dear Teacher,

I am 7 years old.

my favrit thing to do is writing, and I have a new puppy he is 4 months I like school my favrit ocean animal is a killer whale

sincerely
Kylie

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Why Teach Handwriting?



- To help learn letters/sounds for reading
- For Composition and Writing Fluency
- Frees brain for other things
- **To Help with Memory and Learning**
- Legibility Impacts Success

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Why Teach Handwriting?

Handwriting allows access to kinesthetic memory: our earliest, strongest and most reliable memory.

(Berninger, 1997)

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Why Teach Handwriting?

The act of handwriting helps the listener retain information more effectively than when keyboarding.

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Why Teach Handwriting?

Fast, legible handwriting:

- Improves note-taking and test performance
- Allows students to record notes quickly to capture the content of lectures
- Allows students to read through their notes to study for tests

(Farris, 1991; Gentry and Graham, 2010)

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Why Teach Handwriting?



- To help learn letters/sounds for reading
- For Composition and Writing Fluency
- Frees brain for other things
- To Help with Memory and Learning
- **Legibility Impacts Success**

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Why Teach Handwriting?

Learning to write by hand plays a key role in developing literacy and handwriting skills remain crucial for success throughout school.

(Gentry and Graham, 2010)

Effective handwriting and spelling instruction can increase student performance across the curriculum

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Why Teach Handwriting?

Struggling with handwriting can lead to a self fulfilling prophecy.

(Gentry and Graham, 2010)

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Why Teach Handwriting?

Allows students to write quickly and legibly to complete timed tests

(Farris, 1991; Gentry and Graham, 2010)

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Why Teach Handwriting?

Neatness Counts!

- Illegible/poor handwriting can hinder a student getting fair and objective grades
- Teachers give better grades/scores to legible assessments and tests even when content is the same

(Farris, 1991; Gentry and Graham, 2010)

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Difficulty with Writing

Instruction So KEY!

So many processes need to be automatic.



Photo credit: Red Orbit

(Levine, 1987)

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Handwriting Instruction

“An extensive body of research shows that direct and explicit spelling and handwriting instruction is required if all students are to master the mechanics of reading and writing.”

(Gentry and Graham, 2010)

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Handwriting Instruction

Manuscript First!

- Beginning awareness of letters as symbols with meaning
- What children see in books – discussion of certain letters such as “a” and “g” for books and writing needs to occur
- Use of standardized print eliminates confusion – children see the same symbols forms used for reading, writing and spelling

(Birsh, 2011; Berninger, 2009)

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Handwriting Instruction

- Manuscript introduces children to the letter forms they will need to recognize as they begin to learn to read.
- The type face used in print materials young children see is more like print writing than cursive in appearance.
- Solid familiarity with the visual shapes of individual letters is an absolute prerequisite for learning to read.

(Adams, 1990
Gentry and Graham, 2010)

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Handwriting Instruction

- Children need direct, explicit teaching of letter formation and much guided practice to develop automatic handwriting and meet the demands of written expressive language.
- Multisensory associations among visual letters, auditory sounds or names of letters, and kinesthetic touch from using a tool help strengthen recall for both reading and writing.

(Cox, 1992;
Slingerland, 1971)

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Shared Roots: Orton-Gillingham Principles

- Diagnostic and prescriptive
- Multi-sensory teaching and learning of the basic elements of language
- Direct and explicit instruction
- Structured and systematic
- Sequential, cumulative, and flexible
- Cognitive
- Emotionally sound

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Shared Program Essentials

1. Simultaneous multisensory teaching and learning.
2. Slow, thorough, daily practice leading to mastery
3. Consistent approach
4. Tracing – eyes averted
5. Separation of easily confused to minimize reversals
6. Establish appropriate learning positions

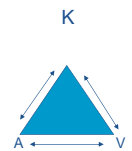
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Kinesthetic memory is our earliest, strongest, and most reliable memory channel.

- Emphasis on building associations:

the linkages
 visual ↔ kinesthetic ↔ auditory



- Simultaneous multisensory involvement
 Simultaneous writing hands, eyes, ears, and voices working together
- Association of the letter(s) that the eyes are seeing and the ears are hearing with the feel of the sound production - by “feel” or kinesthetic pattern rather than by visual memory.

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Principles of Handwriting Instruction

- Reinforce effective work habits such as correct posture, paper position, and pencil grip
- Teach in association with letter name and sound
- “Name” lines for reference points
- Group letters into “like patterns”
- Manuscript (k-2), Cursive (3)

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Principles of Handwriting Instruction

- Talk the student through the letter formations with consistent verbalization
- Introduce letter formations with gross motor writing
- Incremental skill mastery: students sky write, sky write (eyes closed) trace, copy, and eventually do from memory

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Teach with letter name/sound



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Explicit Instruction

- Lower-case then upper case

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Lines Have Names

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Wilson Font and Grouping Letters

- Sky Line Letters
- Plane Line Letters
- Plane Line Round Letters
- Plane Line Slide Letters

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Sky Write / Letter Formation

Students use gross-motor memory to learn letter formation following specific verbalizations.

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Sky Write / Letter Formation

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Letter – Keyword-Sound

This activity also helps students make a multisensory association between the auditory sound of a letter, the grapheme or its visual representation, and the kinesthetic memory of its letter formation.

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Importance of Multisensory Teaching

Using multisensory experiences activates more circuitry during language learning and produces multiple representations in working memory that improve the explicitness, completeness, and durability of what is stored in long term memory.

(Birsh, 2005)

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Handwriting Practice

Student Notebook

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Letter Formation / Letter - Keyword -Sound

Echo / Letter Formation

Dictate Sound – Echo Sound

Write Letter

Say Letter-Keyword-Sound

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Verbalization

Letter Formation for E

E is a sky line letter.
It starts on the (sky) line.

1. Point to the sky line.
2. Go down to the grass line.
3. Cross it on the plane line.
4. Say E - top - N!, have students repeat.

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1-2-3-Right / Let's Write!

- 1 Sit right**
Feet pulled in, feet on floor
- 2 Place paper and hands right**
Paper straight, arms straight, elbow on desk, left hand holding paper
- 3 Grip pencil right**
Finger hold between index finger and thumb, resting on the other fingers

Let's write!

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Some helpful products

The Claw

Twist and Write Pencils

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Letter Formation

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Verbalization Cue Cards

Letter Formation for E

1 is a sky line letter.
It starts on the (sky line).

1. Point to the sky line.
2. Go down to the grass line.
3. Cross it on the plane line.
4. Say E - top - E, have students repeat.

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HOME SUPPORT

family as part of the team

Dear Family:

A new school year has been announced! This year, I shall be using a program called **Foundation** to teach some important basics of reading and spelling. However, I am going to **need your help**.

We know that when a child has a "Cross" in addition to a classroom teacher, the child makes significant progress. We will work together as a "team" - I shall be the teacher and you the coach.

I will do my best to provide you with the necessary tools to take on that role. I shall keep you informed of "what is happening" in the classroom and provide suggestions and a guide as to "what can be happening" at home.

I look forward to a very successful year as we work together with your child in **Foundation**. We will have fun working and helping your child build a strong foundation for literacy!

In the spirit of this, I shall share with you Unit 1 and its related activities.

Once again **thank you** for your interest and cooperation.

Sincerely,

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LIA – Early Year K

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LIA – Late Year K

Lia Sheinoff | 132

March 23, 2012

I like cats

Lia Sheinoff | 132

March 24, 2012

I am excited because

my grandma and grandpa

are going to see me.

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ASHER – Early Year K

Asher 9

DAD ANI

DAD ANI ME

Asher 17

mi basbol cty

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ASHER – Late Year K

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Handwriting Instruction

- Cursive handwriting instruction is usually introduced by Grade 3.
 - Increases speed of handwriting
 - Reduces reversals
 - Provides more consistency about where to start a letter

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Cursive Letter Formation Groups | Lower Case

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Verbalization Cue Cards

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Current Trends

Manuscript / Cursive vs Computers / Keyboarding

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Common Core State Standards

Handwriting in the Common Core State Standards (CCSS).

- Legible manuscript writing is included in Grades K and 1, handwriting is not included after Grade 1.
- Standards do not mention cursive handwriting

Keyboarding is skillset nestled into writing standard

- “use technology to produce and publish writing (using keyboarding skills)” (W.3.6)
- “...demonstrate sufficient command of **keyboarding** to type a minimum of one page” [two by fifth grade, three by sixth] in a single sitting

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States are Debating the *Cursive Handwriting* Issue

- Some states have supplemented CCSS to require the teaching of these skills:
 - Alabama, California, Massachusetts, Arkansas, South Carolina, Tennessee, Idaho, North Carolina
- Other states currently reviewing “back to basics” legislation requiring cursive writing and memorization of multiplication tables:
 - NH senators watered down a bill that would have required public schools to teach cursive writing, it only encourages districts to do so. (March 20, 2015)

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Creating Better Readers and Writers

The Importance of Direct, Systematic Spelling and Handwriting Instruction in Improving Academic Performance

By J. Richard Gentry, Ph.D., and Steve Graham, Ed.D.



White Paper
FEB 2015

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Creating Better Readers and Writers

The Importance of Direct, Systematic Spelling and Handwriting Instruction in Improving Academic Performance

http://www.sapersteinassociates.com/downloads/Color%20copy%20National_Whitepaper.pdf

Thank you!

Handwriting: It's More Important Than You Might Think!

Thank you!

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