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Why Does Writing Make Us Smarter?



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Don't trade in your pencils and paper for a keyboard just yet.

A new study that compared the different brain processes used for writing by hand and typing has found that there are cognitive benefits to putting a pen to paper. These findings give support to the continued teaching of penmanship and handwriting in schools.

Children who don't learn the skill of handwriting, like generations before them had to, may be missing out on an important developmental process. Compared to using two hands to type out letters on a keyboard, writing with one hand uses more complex brain power.



Writing is more complicated because it integrates the following three brain processes:

- Visual: Seeing what is on the paper in front of you.
- Motor: Using your fine motor skills to actually put the pen to paper and form the letters to make the words.
- Cognitive: Remembering the shapes of the letters requires a different type of feedback from the brain.

As adults, we know that writing by hand is a much slower process than typing on a keyboard. And we're all in a hurry to share our every thought with our social networking worlds. But, as an experiment, sit down and write a letter. See how different it feels to actually hold the pen and to have to plan out your thoughts. It'll be good for your brain. Handwriting may be slower, and there is no spell check, but this is precisely why picking up a pen and writing your thoughts down on paper may actually help you exercise your brain.

ORIGINAL RESEARCH:

[Handwriting Is Beneficial to Children's Cognitive Development](#)

Summary

There have been very few studies that address the various modalities of writing, such as the difference between writing with a pen on paper and a keyboard and a mouse. This review attempted to differentiate between handwriting and keyboard writing and their different implications on children's learning; in addition the researchers looked at adult reading and writing behavior and experiences. Results from analysis of previous literature on various writing methods and their implications showed that there is a significant difference between handwriting and the use of a mechanized device. Neuroscientists have noted that the shift from handwriting to mechanized or technical writing has serious implications on cognition and skill development.

Introduction

There have been very few studies that explore the implications of the change of writing devices. This change is from traditional pen on paper to computer keyboards, digital stylus pens, and writing tablets and beyond. There are two aspects of writing; one is the visual aspect and the other is the perception and motor aspect, otherwise known as "haptics." Some studies have revealed that in the actual act of writing by hand you must use your motor skills to copy a letter graphically, a slower process that actually aids in cognitive development. This review examined the effects of technical or mechanized writing on cognitive development and writing and other finer skills in children; and also how daily mechanized writing has affected the hand/brain relationship in learning.

Methodology

- The researchers evaluated studies from neuroscience, biopsychology and evolutionary biology for this review.
- The researchers attempted to detect how writing by hand aids in learning and cognitive development, and also the development of language, especially in children from various studies.
- They also studied evidence such as brain images to identify the connections between visual stimulation by handwriting and recognition of letters and alphabets.

Results

- Evidence from studies has shown that writing skill is a process that needs an integration of visual, motor, as well as cognitive or perceptive parts. The perception allows one to remember the shape of the letters that is written while sight and motor skills of the hand enable the writing. Present brain imaging shows that the nerves are also connected to these three components.
- When a person writes uses a typewriter or a computer, he changes this pattern to a great extent. For example, typewriting involves both hands while handwriting involves one, and handwriting is slower and more laborious than typing. Handwriting needs a person to shape a letter, where typing does not.
- Some Japanese studies have shown that repeated handwriting aids in remembering the shape of the letters better. One study showed that when children learned words by writing, they remembered it better than if they learned it by typing.
- Handwriting makes a person focus on one point alone—the tip of the pen. However, mechanized writing makes a writer oscillate between the keypad and the monitor.

Next steps

Authors state that while this study has explored some previous work connecting writing skills of the hand and the brain, a lot more needs to be done to explain the actual connection. They suggest further studies to explore the implications of modern learning, reading and writing skills on the development of cognition and intelligence.

Conclusion

As more and more children learn their first words and letters on the computer instead of on paper, this study is very relevant. There has been minimal research in this field and reviews of previous studies shows that when comparing handwriting to mechanized writing, the “hand is not merely a metaphor or an icon of humanness, but often the real-life focal point of a successful and genuinely fulfilling life,” opines the authors. Educators need to be aware of these findings and modify their teaching accordingly.

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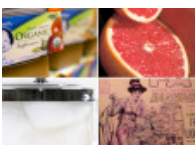
Publication Journal: Advances in Haptics

By Anne Mangen; Jean-Luc Velay; National Centre for Reading Education and Research, University of Stavanger, Norway, and the Mediterranean Institute for Cognitive Neuroscience, CNRS, Université de la Méditerranée, Marseille, France

*FYI Living Lab Reports Are Summaries of the Original Research.

Read more at FYI Living: <http://fyiliving.com/research/handwriting-is-beneficial-to-childrens-cognitive-development/>

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