

# TO *Write*, OR NOT TO WRITE: The Benefits of Teaching Cursive in Montessori

by Jason Phillips

Montessori continues to teach cursive handwriting, even in this digital age, and discussions about the best ways to integrate technology (or not) into Montessori are ongoing. The question of teaching cursive writing comes up a lot, from parents, other educators, and within the Montessori community itself. I thought I'd take a look at what Maria Montessori, some brain and learning research experts, and some of Dundas Valley Montessori School's guides have to say on the subject.

In *Hardwired for Writing: The Intelligence of the Hand*, DeeDee Hughes, Managing Editor of Living Education, references a number of experts (two of whom were featured in an earlier Toronto Star article by Andrea Gordon) and a 2009 study from the University of Washington, *Comparison of Pen and Keyboard Transcription Modes in Children With and Without Learning Disabilities*. Hughes asks an important question relevant to Montessori: "What is the difference between handwriting and typing, and how does each impact learning and memory?"

Instruction in cursive begins very early for children in Montessori schools. The Sandpaper Letter materials, for example, are an integral part of teaching children the sounds letters make, while also providing a tactile association as each cursive letter shape is traced with the

finger; that is, the activity incorporates a kinesthetic quality that provides a multi-sensory dimension to learning. Children are learning the beginning elements of writing before (or at the same time) as they are approaching rudimentary reading levels, and the tactile component provides a strong learning benefit.

In *The Formation of Man*, Maria Montessori discusses the kinesthetic preparation for writing provided by Casa materials: "The hand can be prepared directly to trace the signs of the alphabet by the help of the tactile and muscular senses, not by that of sight." It is important to experience the physical act of forming letters by writing them, not just by seeing them. She discusses the benefit of such learning in Montessori's *Own Handbook*, where she says, "We have already seen that the purpose of the word is to fix ideas and to facilitate the elementary comprehension of things." The physical act of forming words on the page helps us to not only develop better handwriting; it also helps us to develop the neural networks that become memories and knowledge.

As the authors of the University of Washington study say, "Forming a written word letter by letter by pen may leave a stronger memory trace for written words than does producing a word letter by letter by keyboard in beginning and developing writers."

The relationship between kinesthetic activity and learning is reinforced by Anne Mangen and Jean-Luc Velay in "Digitizing Literacy: Reflections on the Haptics of Writing" (haptics involves communication by touch). Mangen and Velay say, "Perception and motor action are closely connected and, indeed, reciprocally dependent...Research in experimental psychology, evolutionary psychology, and cognitive anthropology...has convincingly demonstrated the vital role of haptic exploration of tangible objects in human learning and cognitive development."

Using the hand to form cursive letters and words addresses the need to both see and physically experience writing. "Various data converge to indicate that the cerebral representation of letters might not be strictly visual," say Mangen and Velay, echoing Montessori's *Formation of Man*, "but might be based on a complex neural network including a sensorimotor component acquired while learning concomitantly to read and write."

As is often the case, contemporary research evidence is supporting what Montessori figured out one hundred years ago.

A multi-sensory approach to teaching and learning results in a significant amount of cognitive activity and development. As was pointed out in Gordon's

2009 Toronto Star article, “*The Death of Handwriting*,” Dr. Norman Doidge of the University of Toronto’s Department of Psychiatry, and the Research Faculty at Columbia University’s Center for Psychoanalytic Training and Research in New York, “Fears that if cursive fades away, so will cognitive skills that handwriting builds. If children don’t learn those movements, their brains will develop in a different way that no one

whose studies were, “Among the first of their kind, [and] show that while the left visual word form area perceives and decodes words for their meaning in written language, the right side is where we interpret the style of writing, allowing us to identify the writer rather than the word, just as neighbouring areas in the right brain play a key role in allowing us to recognize faces. As soon as that recognition kicks in, it activates what’s

Regarding brain development, the University of Washington researchers note:

“A complicating factor in comparing writing by pen and by keyboard is the fact that we use only one hand when writing by pen but two hands when writing by keyboard. Only the contralateral cerebral hemisphere regulates one writing hand, but two contralateral cerebral hemispheres are involved when writing by two hands; coordinating the two hemispheres requires a white fiber tract commissure (corpus callosum), which may not be fully myelinated until the middle school years or later (age 11 and above).”

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has really thought through.” When a child types or prints, he produces a letter the same way each time. In cursive, however, each letter connects slightly differently to the next, which is more demanding on the part of the brain that converts symbol sequences into motor movements in the hand. That is similar to the way a child translates symbol sequences into motor movements of the mouth and tongue in order to talk or movements of the eye in order to read. That’s why Doidge says, “Practising the complex demands of cursive also builds fluency in speaking and reading.”

Gordon also cites Dr. Jason Barton, Director of Clinical Neuro-ophthalmology and Director of the Human Vision and Eye Movement Laboratory at the University of British Columbia,

known as a memory trace (a biochemical alteration in the brain created by something learned) and fans out, setting off other sensory memories. Once triggered by perception (whether of a face, a voice, or handwriting), memory reverberates through all the senses and in all the corridors of your brain, bringing back emotions, knowledge, all the different facets of information and experiences with that person stored from the past,” Barton says.

Cursive makes the brain work, which makes the brain develop, which is a significant part of learning. Mangen and Valey assure, “Studies confirmed that letters or characters learned through typing were subsequently recognized less accurately than letters or characters written by hand.”

Trying to make young children type before their brains are physically capable of accomplishing the task can be as pointless as it is frustrating for the child. As the evidence above shows us, though, learning the cursive forms of letters and words at a young age provides a multitude of benefits.

At DVMS, we see a few other advantages. Throughout our language and literacy education at all levels, we try to present an understanding of language as a construct – something that humans use to build meaningful messages. In this context, when kids are learning cursive, they are learning that, in order to make words, the sounds of each letter need to be joined together. Writing in cursive provides a visual and kinesthetic experience of the practice of constructing things that mean something.



Pat MacIsaac, Casa South guide at DVMS, also points out that cursive handwriting “best mimics what the child does naturally.” Pat notes that when children draw or act out writing, they do not form geometric, print-like shapes; they tend to form looping, connected shapes. Pat also notes, “Cursive makes complete words, rather than separate letters [of print].” Again, the cursive writing is more visually and kinesthetically instructive.

Casa East director Holly Schefold reiterates Pat’s thinking, and adds that with cursive, “It is harder to mix up letters such as b and d, and p and q, which is an issue for a lot of kids learning to write.” Another significant advantage of writing in cursive has to do with quality and quantity of work. This point is highlighted in the University of Washington study:

“The relative advantage of the pen over the keyboard has been found for three different outcomes at the text level of production in elementary-school children: (a) essay writing for amount written and rate of word production in second, fourth, and sixth grade (first research aim of current study); (b) number of complete sentences in essays (second research aim of current study); and (c) number of ideas expressed in essays.”

Learning cursive, it turns out, offers a multitude of benefits to early learners. There is, however, still room for computers and keyboarding. When humans learned to write, both our cultures and the physical structures of our brains changed as we shifted from using our oral and aural senses to communicate to using our visual and tactile senses. The steady march of technological progress has brought us to a point of change again. Nobody really knows how our minds and cultures will change as we continue to develop new means and methods of communicating. For Montessori schools, it is important to negotiate a balance between progress and what we know works. Cursive still holds many advantages for learning and development, and all we can do is look to current evidence to determine how our programs can best evolve.

In that spirit, a final word from DVMS’s Upper Elementary Director Kathleen MacKinnon:

“Cursive is something that has to be learned. Print is everywhere, and they are exposed to it all the time. Cursive has to be taught, so it is a great opportunity for learning. Although sometimes at the Upper Elementary level, you do get chances to teach kids to form print letters properly, and if you walk into the adolescent rooms, you see how they gravitate to computers.”

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