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MEMORANDUM

DATE: April 29, 2015

TO: All Members of the Delaware State Senate
and House of Representatives

FROM: Ms. Daniese McMullin-Powell, Chairperson
State Council for Persons with Disabilities

RE: H.B. 52 (Cursive Writing)

The State Council for Persons with Disabilities (SCPD) has reviewed H.B. 52 which would require the teaching of cursive writing for all public schools in Delaware. Background is contained in the attached articles. In a nutshell, Common Core standards do not require students to learn cursive writing. Several states have reacted by adopting legislation requiring cursive instruction, including California, Georgia, Massachusetts, and Tennessee. Legislation is pending on other states. For example, in March 2015, the New Hampshire Senate voted to require students to be taught cursive and multiplication tables.

Opponents argue cursive proficiency is unnecessary given the prevalent use of electronic keyboards on computers, phones, and pad devices.

Proponents argue that learning cursive enhances brain function, increases fine motor dexterity, allows students to read handwritten and historic documents, and is artistic. I've attached a few articles which address writing by hand and brain functioning.

The debate is reminiscent of that over Braille instruction for individuals who are blind or have visual impairments. With screen reader software, text can be read to such individuals. With software such as Dragon Dictate, individuals' verbal dictation is printed on a screen. Thus, detractors of Braille instruction argue it's unnecessary. To the contrary, studies confirm that instruction in Braille increases brain function and is correlated with higher educational and vocational achievement. See attached articles. Although the Delaware Department of Education has proposed regulations omitting Braille instruction, it has been prompted to reinstate standards when reminded that Delaware law requires instruction in Braille. See Title 14 Del.C. §206.

After weighing the pros and cons of requiring cursive instruction, the SCPD endorses the proposed legislation.

Thank you for your consideration and please contact SCPD if you have any questions regarding our position or observations on the proposed legislation.

cc: Mr. Brian Hartman, Esq.
Governor's Advisory Council for Exceptional Citizens
Developmental Disabilities Council

HB 52 cursive writing 4-29-15

Some teachers haven't written off cursive yet

Cathryn Creno, The Arizona Republic 3:01 a.m. EDT July 27, 2014



(Photo: Charlie Leight, The Arizona Republic)

PHOENIX — With eyebrows furrowed and fingers holding pencils in clawlike grips, third graders at Lowell Elementary School in Mesa were tackling an assignment involving one of the most controversial topics in American education: cursive writing.

Minutes ticked by and most of the students, 9-year-olds in teacher Brittney Chapman's class last spring, had formed only a few words or a single sentence on a lined worksheet.

"It's hard because you have to keep the pen down and connect the letters," said Luis Carlos Miranda, whom Chapman described as one of the better writers in her class of 23.

Another student, Angel Guerra, said he thinks cursive is important because "there is a lot more writing in life than there is typing."



USA TODAY

[Ind. lawmaker won't give cursive bill a writing chance](#)

<http://www.usatoday.com/story/news/nation/2014/01/30/indiana-senator-wants-cursive-writing-return/5053267/>

Lowell students are the poorest in Mesa Public Schools, and many do not have access to computers outside of school.

Chapman frequently requires her students to write in cursive. They also need to know how to read her cursive writing on a whiteboard to understand their daily homework assignment.

But many teachers nationwide no longer teach students the curlicue script that older generations once viewed as the hallmark of a well-educated person.

The Arizona College and Career Ready Standards, which are based on the Common Core State Standards Initiative, do not mandate that students learn cursive. Nor did Arizona's previous standards, which the state AIMS assessments are based on.

Forty-four states now follow Common Core. Arizona's version was fully implemented in public-school classrooms last year.

The standards require that students master keyboarding and a form of handwriting, either print or cursive, said Kathryn Hrabluk, who was an associate superintendent for the Arizona Department of Education until she retired this month.



Brittney Chapman brainstorms ideas in her class at Lowell Elementary School. She often makes her students write in cursive, and she writes assignments in cursive on

<http://www.usatoday.com/story/news/nation/2014/07/27/schools-debate-cursive-writing/13231241/>

4/1/2015

The standards also require that teachers show students how to organize concepts, choose the right words and write correctly spelled words and grammatical sentences.

"The goal is to have students be able to successfully articulate their thoughts, learning and ideas so others can clearly understand," Hrabluk said.

But some states that bought into Common Core are reconsidering the position. Seven states — California, Idaho, Kansas, Massachusetts, North Carolina, South Carolina and Tennessee — are either debating or have recently mandated that cursive be brought back to the classroom.

Arizona has not joined the debate, possibly because many schools still teach cursive despite the lack of a state requirement.

"Kids love to learn how to write in cursive," said Suzan DePrez, Mesa schools assistant superintendent of curriculum and instruction.

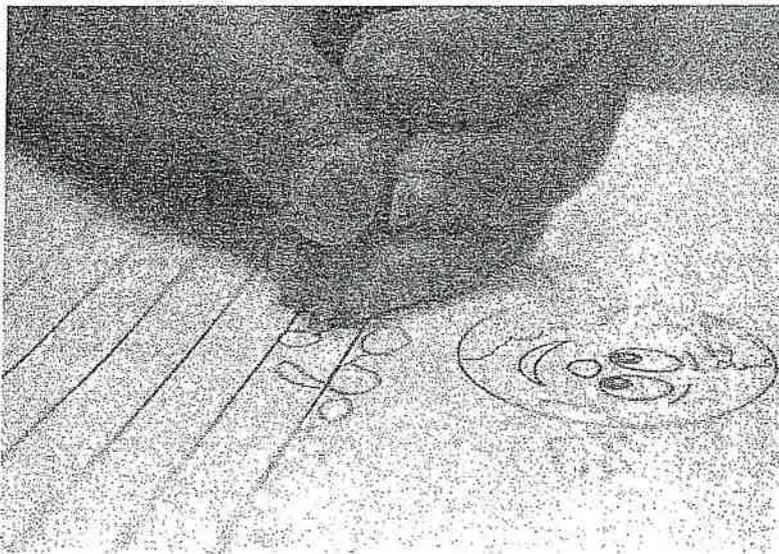
"It is a sort of rite of passage. I think there is artistic value in cursive ... also knowing how to read communication in cursive is something we should be able to do."

Officials in other districts also said that they require students to learn cursive, but a few said informally they don't spend much time teaching cursive because they know their students will enter a world where keyboarding is a more important skill.

"Are you expected to publish your stories in cursive handwriting?" DePrez asked an *Arizona Republic* reporter, rhetorically. "The real question is when, beyond elementary school, is one expected or asked to produce in cursive writing?"

Cursive advocates, such as Ahwatukee Foothills parent Lonna Henderson, say that question misses the point.

"I would love to see cursive come back," said Henderson, whose son enters ninth grade and whose daughter enters second next month.



Melissa Gutierrez carefully writes out cursive words on an assignment for teacher Brittney Chapman. Proponents say learning to write with in cursive aids in brain development; anti-cursive educators say the script is obsolete. (Photo: Charlie Leight, *The Arizona Republic*)

Henderson, 44, said her son learned cursive basics in third grade but did not spend the hours that she did in school perfecting legible script and an attractive signature. Her daughter has not been introduced to cursive yet.

Henderson said she would like to see both of her kids be able to write quickly and neatly in cursive. For several afternoons this summer, she had them practice D'Nealian — a form of printing said to be a precursor to cursive.

"I would love to see an emphasis on pretty handwriting again," she said.

Although many schools teach cursive only in the third grade, Chandler Traditional sixth-grade teacher Jennifer Pawlik said she continues to give her students time to practice and improve their handwriting.

Another cursive advocate is conservative-radio personality Glenn Beck. He argues that people must be able to at least read cursive if they want to appreciate America's Declaration of Independence and other hand-written historical documents.

Beck is also a Common Core critic who believes the standards "dumb down" school curricula.

"Why are they no longer teaching cursive writing?" he asked in one broadcast.

"The easiest way to make someone a slave is to dumb them down. They don't teach them how to read and write."

Some academic researchers advocate teaching cursive to students in the first three years of elementary school, saying research shows cursive helps brain development.

A year ago, *Psychology Today* published an article by Texas A&M University neuroscientist William Klemm that argues that cursive makes kids smarter.

"Cursive writing, compared to printing, is even more beneficial because the movement tasks are more demanding, the letters are less stereotypical, and the visual-recognition requirements create a broader repertoire of letter representation," he wrote.

Around the same time, the National Association of State Boards of Education issued a report stating that cursive helps develop memory, fine motor skills and better expression.

But an Arizona State University educational-leadership professor considered one of the nation's experts in how children learn handwriting says schools no longer need to teach cursive.

"Cursive handwriting does not make people more intelligent," Steve Graham said. "That is the kind of stuff that floats around but has no basis scientifically."



USA TODAY

Tenn. students may be required to learn cursive

(<http://www.usatoday.com/story/news/nation/2014/03/10/tennessee-cursive-penmanship-bill-vote/6260613/>)

Graham said before computers were commonplace, adults valued cursive because they could write it faster than they could print. Today, e-mails, text messages and documents created in systems like Microsoft Word take the place of handwritten pages, he said.

Printed signatures are acceptable today, as are electronic signatures, he said. A scrawling John Hancock is no longer needed in today's world. Electronic signatures are legal under Arizona law.

Graham noted that it is still important for children to learn to print clearly, because even at the high-school level only about half of students' work is typed. Fast, accurate keyboarding skills also are important, he said.

"If a student has to constantly think about where the key is, that is going to have an impact on their ability to write well," he said.

Graham said far more important than whether students are printing or writing in cursive is that they are being given assignments that encourage them to write well-thought-out sentences and paragraphs. Far too often, he said, kids are simply asked to fill in the blanks on worksheets.

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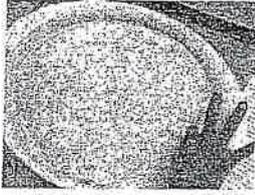
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Is cursive's day in classroom done?

Denise Smith Amos, The Cincinnati Enquirer 8:17 a.m. EDT August 12, 2013



(Photo: Leigh Taylor, The Cincinnati Enquirer)

As schools swap out old state standards for new Common Core academics (</article/20130812/NEWS0102/308120006>), educators are warning about an overlooked casualty of progress — cursive handwriting.

They say that, because Common Core standards don't call for cursive instruction, public schools are more likely to drop or, at least, de-emphasize it. Their fears are not unfounded.

— At least 41 states do not require public schools to teach cursive reading or writing.

— Common Core is silent on cursive, but it prioritizes computer use and keyboarding skills because its tests are taken on computers. Even before Common Core, many schools, in response to No Child Left Behind laws, had already narrowed their curricula mostly to the subjects being tested by their states. Even in the 1990s, cursive writing got less and less instructional time, teachers said.

Earlier this year, bills were introduced in state legislatures in North and South Carolina, Indiana and Idaho mandating cursive instruction. In some cases, the bills were supported by companies that sell writing materials.

Jeffrey Mims Jr., a longtime educator who represents Butler and several other counties on the state school board, said closing the book on cursive could limit some children's futures. "I don't understand the need to eliminate it," he said.

"I think it's a basic element of students' control and peace of mind. You pay attention to what you're doing when you're writing in that format."

Cursive helps coordination, motor skills, backers say

The cursive question has become a national one recently.

In the murder trial of George Zimmerman, who shot and killed Florida teen Trayvon Martin, Trayvon's 19-year-old friend, Rachel Jeantel, testified to being on a cellphone talking with him just before his death. Many in the courtroom were shocked, though, when Jeantel admitted on the stand that she could not read a document a lawyer handed to her -- because it was written in cursive.

Experts have said handwriting training helps small children develop hand-eye coordination, fine motor skills, and other brain and memory functions. Mims said cursive writing could be important for children who grow to be a surgeon, a painter or some other professional requiring laser-like precision with their hands.

Even educators who like cursive admit they are of two minds about whether it should remain a classroom staple.

When Lockland Elementary's third-grade teacher Cheryl Adams saw that Common Core lacked a cursive requirement, she quietly celebrated, believing she'd have more time to teach other essentials, such as reading. But her principal at the time informed her she'll still be teaching cursive, mandatory or not.

Adams doesn't mind, she said, because her students like cursive writing. "It's not art, but it is artistic," she said. "I think it's just a time when they can sit and copy this letter over and over and practice it. I think it's restful for them."

Catholic schools, long known for emphasizing penmanship, are still teaching it but are using less class time, said Kathy Mears, the National Catholic Education Association's executive director of elementary schools. Instead of getting it a half hour or so a day, she said, students may get 15 minutes' practice three times a week.

"I would not drop it, because I do think it's important for the development of children, but ... I realize we've given teachers more to teach but not more time," Mears said.

An online poll by Harris Interactive in June showed 79 percent of adult respondents and 68 percent of kids, ages 8-18, think cursive should still be taught. Nearly 49 percent of adults and 35 percent of youth say practicing reading and writing in cursive improves literacy.

The poll, paid for by pencil maker Mega Brands America, is neither random nor representative of the entire country. It does bear out some biases against <http://www.usatoday.com/story/news/nation/2013/08/12/is-cursive-day-in-classroom-done/2642071/> 4/1/2015

When asked what they assume about people who can't read or write cursive, 30 percent of adults polled and 25 percent of children judged the person as less literate, and 7 percent of adults and 11 percent of children assumed they are "just not smart."

Steve Moore, a retired chemical engineer who consults with businesses, said cursive was not essential in his 30-plus years at Procter & Gamble. "You have to be able to express yourself in writing," he said. "But in today's world all the critical writing is being done on a keyboard."

Many of today's teens are more comfortable texting on cellphones, touch-typing on iPads or tapping on laptop keys.

"A lot of children ... can't really read cursive right now," Mears said. "I don't think it's life-altering, that you won't survive in the world if you can't read cursive."

But they may be missing out on some intangible benefits, said Cincinnati Country Day's Shanna Morarity, a second-grade teacher who teaches cursive. For some kids, she said, it's a rite of passage to be able to write like grown-ups.

"Children like it, and it promotes perseverance," she said. "Because they enjoy it, they are determined to write full words and they love writing their names."

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Mar. 5, 2015 6:06 PM ET

New Hampshire bill requires cursive, multiplication tables

By KATHLEEN RONAYNE, Associated Press <http://www.ap.org/newsvalues/index.html>

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CONCORD, N.H. (AP) — As schools adopt new education standards and rely more on computers in the classroom, a group of New Hampshire senators want to make sure the basics of learning cursive and multiplication tables don't get left behind.

"You definitely need to teach typing and keyboarding and all of that, but kids do need to be able to sign their names, they do need to be able to read the Founding Fathers documents," said Republican Sen. Nancy Stiles, the main sponsor of a bill that would require public schools to keep teaching both. "(Cursive) is an art and a skill that shouldn't be lost."

The push to keep cursive in the classroom has become a nationwide movement as schools adopt the Common Core education standards, which omit mention of the handwriting style. The K-12 standards, adopted by most states, have drawn widespread criticism. Among other objections, opponents say, the standards complicate math education and take away local and state control over school instruction.

New Hampshire senators on Thursday passed the state bill on a voice vote and sent it on to a finance committee to assess any possible costs. North Carolina previously passed legislation on cursive and multiplication, and several other states have taken up bills to require cursive.

Stiles said she submitted the bill at the request of two constituents, and opponents of Common Core say the legislation only begins to scratch the surface of problems with the standards.

"The legislators are now hearing from parents who are finding flaw after flaw after flaw," said Ann Marie Banfield, education liaison for Cornerstone Action, a conservative advocacy group.

But opponents of the measure say it's unnecessary and misguided because curriculum decisions in New Hampshire have always been made at the local level. State Board of Education Chairman Tom Raffo said the state has no plans to move schools away from teaching cursive or multiplication tables, but noted that cursive has never been required by New Hampshire standards.

"How you learn to write, how you learn to multiply, is decided at the local level, as is all curriculum and instructional practices, as it has always been," Raffo said.

Sharon McCrone, acting chair of the University of New Hampshire's math and statistics department, said knowing multiplication tables is an important building block for students to learn advanced math, but said it's critical that students have good "number sense" and understand how to arrive at answers in the tables. She said that understanding helps students apply math to everyday life, like figuring out how much to pay for 1 pound of grapes if a sign says "5 pounds for \$2," McCrone said.

Democratic Sen. Molly Kelly, the only lawmaker to speak against the bill, said she opposes it because nothing in state law prohibits schools from teaching either skill. "I think that sometimes we go too far in what we legislate," she said. "I think this is one of those bills that is not necessary."

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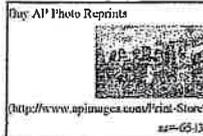
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New Rule Has Drivers Furious



US drivers who drive less than 50 mi/day are in for a big surprise.. (continued here)



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Better learning through handwriting

Date: January 24, 2011

Source: The University of Stavanger

Summary: Writing by hand strengthens the learning process. When typing on a keyboard, this process may be impaired. Neurophysiologists have examined research which goes a long way in confirming the significance of these differences. When writing by hand, our brain receives feedback from our motor actions, together with the sensation of touching a pencil and paper. These kinds of feedback is significantly different from those we receive when touching and typing on a keyboard.

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Writing by hand strengthens the learning process. When typing on a keyboard, this process may be impaired.

Associate professor Anne Mangen at the University of Stavanger's Reading Centre asks if something is lost in switching from book to computer screen, and from pen to keyboard.

The process of reading and writing involves a number of senses, she explains. When writing by hand, our brain receives feedback from our motor actions, together with the sensation of touching a pencil and paper. These kinds of feedback is significantly different from those we receive when touching and typing on a keyboard.

Learning by doing

Together with neurophysiologist Jean-Luc Velay at the University of Marseille, Anne Mangen has written an article published in the *Advances in Haptics* periodical. They have examined research which goes a long way in confirming the significance of these differences.

An experiment carried out by Velay's research team in Marseille establishes that different parts of the brain are activated when we read letters we have learned by handwriting, from those activated when we recognise letters we have learned through typing on a keyboard. When writing by hand, the movements involved leave a motor memory in the sensorimotor part of the brain, which helps us recognise letters. This implies a connection between reading and writing, and suggests that the sensorimotor system plays a role in the process of visual recognition during reading, Mangen explains.

Other experiments suggest that the brain's Broca's area is discernibly more activated when we read a verb which is linked to a physical activity, compared with being read an abstract verb or a verb not associated with any action.

"This also happens when you observe someone doing something. You don't have to do anything yourself. Hearing about or watching some activity is often enough. It may even suffice to observe a familiar tool associated with a particular physical activity," Mangen says.

Since writing by hand takes longer than typing on a keyboard, the temporal aspect may also influence the learning process, she adds.

The term 'haptic' refers to the process of touching and the way in which we communicate by touch, particularly by using our fingers and hands to explore our surroundings. Haptics include both our perceptions when we relate passively to our surroundings, and when we move and act.

A lack of focus

There is a lot of research on haptics in relation to computer games, in which for instance vibrating hand controls are employed. According to Mangen, virtual drills with sound and vibration are used for training dentists.

But there has been very little effort to include haptics within the humanistic disciplines, she explains. In educational science, there is scant interest in the ergonomics of reading and writing, and its potential significance in the learning process.

Mangen refers to an experiment involving two groups of adults, in which the participants were assigned the task of having to learn to write in an unknown alphabet, consisting of approximately twenty letters. One group was taught to write by hand,

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while the other was using a keyboard. Three and six weeks into the experiment, the participants' recollection of these letters, as well as their rapidly in distinguishing right and reversed letters, were tested. Those who had learned the letters by handwriting came out best in all tests. Furthermore, fMRI brain scans indicated an activation of the Broca's area within this group. Among those who had learned by typing on keyboards, there was little or no activation of this area.

"The sensorimotor component forms an integral part of training for beginners, and in special education for people with learning difficulties. But there is little awareness and understanding of the importance of handwriting to the learning process, beyond that of writing itself," Mangen says.

She refers to pedagogical research on writing, which has moved from a cognitive approach to a focus on contextual, social and cultural relations. In her opinion, a one-sided focus on context may lead to neglect of the individual, physiological, sensorimotor and phenomenological connections.

Interdisciplinary collaboration

Within the field of psychology, there is an awareness of the danger of paying too much attention on mentality. According to Mangen, perception and sensorimotor now play a more prominent role.

"Our bodies are designed to interact with the world which surrounds us. We are living creatures, geared toward using physical objects – be it a book, a keyboard or a pen – to perform certain tasks," she says.

Being a media and reading researcher, Anne Mangen is a rare bird within her field of study. And she is very enthusiastic about her collaboration with a neurophysiologist.

"We combine very different disciplines. Velay has carried out some very exciting experiments on the difference between handwriting and the use of keyboards, from a neurophysiologic perspective. My contribution centres on how we – as humans with bodies and brains – experience the writing process, through using different technologies in different ways. And how these technologies' interfaces influence our experience," she concludes.

Story Source:

The above story is based on materials provided by The University of Stavanger. The original article was written by Trond Egil Toft; translation by Astrid Sivertsen. Note: Materials may be edited for content and length.

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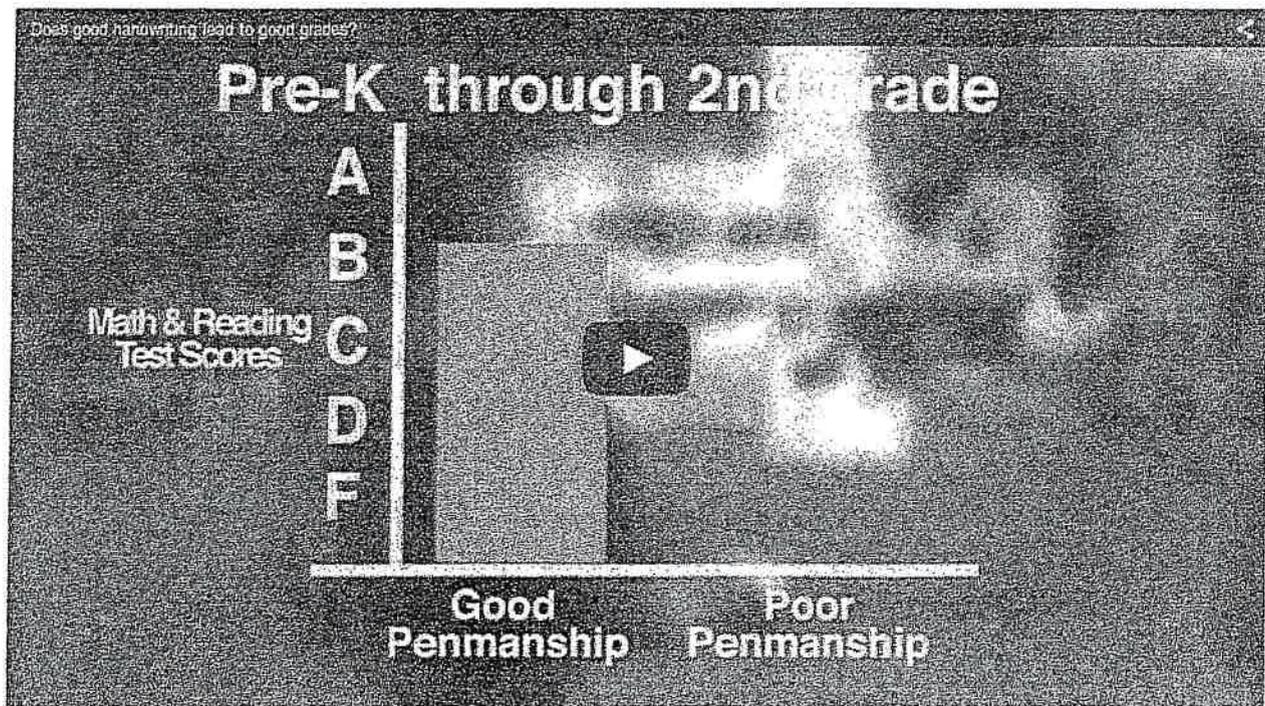
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Good handwriting and good grades: FIU researcher finds new link

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Who cares about handwriting, anyway? It's the 21st century, after all. We have iPads and iPhones, computers that spell check and fonts that go from French script to Freestyle and back to Times New Roman.

But to Laura Dinehart, an assistant professor at Florida International University's College of Education, handwriting matters. A lot.

By Jean-Paul Renaud MPA '11

In research funded by the Children's Trust and soon to be published in the Journal of Early Childhood Education and Development, Dinehart discovered that 4-year-olds who demonstrate strong handwriting skills are more likely to excel academically in elementary school. Research on the

importance of handwriting is just beginning to emerge, and Dinehart's findings establish a new link in understanding how penmanship plays a role in a child's academic development.

"We talk about reading, we talk about math, but no one talks about handwriting," Dinehart said. "It's not even a subject area in many classrooms anymore. We don't ask kids to spend time on their handwriting, when in fact, the research is clear that kids who have greater ease in writing have better academic skills in 2nd grade in both reading and math."

Dinehart took a sample of 1,000 2nd grade students in Miami-Dade County Public Schools and linked their grades and academic scores back to the information gathered from them when they were still in pre-kindergarten.

Students who received good grades on fine motor writing tasks in pre-k had an average GPA of 3.02 in math and 2.84 in reading – B averages. Those who did poorly on the fine motor writing tasks in pre-k had an average GPA of 2.30 in math and 2.12 in Reading – C averages.

More impressively, those who did well on the fine motor writing tasks in pre-k scored in the 59th percentile on the Reading SAT in second grade (just above average) and in the 62nd percentile on the Math SAT. Kids who did poorly on the fine motor writing tasks in pre-k scored in the 38th percentile on the Reading SAT in second grade and in the 37th percentile on the Math SAT.

There is still much research to be done, and many questions to answer. What exactly is happening when a child's academic performance improves when his or her handwriting is practiced? Exactly how much practice is necessary before results are seen?

Dinehart will attempt to answer those questions in the second part of her research. However, one thing is clear.

"People should take a second look at how important handwriting might actually be," she said. "And public schools should rethink how much they focus on handwriting in the classroom and how those skills can really improve reading and math."

For tips on how parents can encourage their children to practice their handwriting, click [here](#).

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Last reply was 02/25/2012

1.  [Evelyn Perez](#)
View [01/17/2012](#)

Great article! I truly enjoyed reading it. I'm glad I'm not the only one that was O.C.D. about my handwriting as a child!

2.  [Your Therapy Source](#)
View [01/17/2012](#)

This is excellent research to support pediatric occupational therapy. Children who exhibit fine motor delays can qualify for school based occupational therapy services to improve their skills.

Although I agree with the author of this article regarding the importance of teaching handwriting, I do not understand where the title of the article holds true. The research indicates higher scores in fine motor skill development had an undetermined relationship to higher grades. I did not see where any handwriting analysis was evaluated or reviewed.

-  [Laura Dinehart](#) replied:
View [01/17/2012](#)

Glad you like the research... I agree that it supports pediatric occupational therapy and I hope it furthers your endeavors. In response to you final thought, I want to note that children's fine motor writing skills at age 4 were evaluated using a standardized instrument that provided parameters by which to score their writing skills. I hope that clarified a bit and take care!

-  [Celina Fabrizio](#) replied:
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Research Study: Early Braille Education Vital

by Ruby Ryles, Ph.D.

An exhaustive study has cast aside some erroneous stereotypes while underscoring the importance of Braille education at an early age. The study has revealed that literacy rates of blind high school students who began their Braille education at an early age are consistent with those of their sighted peers. The study further disclosed that legally blind children who received infrequent or no Braille training, or who began their Braille education later in life, exhibit noticeably lower literacy rates.

The study was conducted by Ruby Ryles, Ph.D., founding coordinator of the master's program in Orientation and Mobility at Louisiana Tech University/Louisiana Center for the Blind. Ryles performed the study for her University of Washington doctoral dissertation in special education, titled "Relationship of Reading Medium to Literacy Skills of High School Students Who Are Visually Impaired." Results from that and a preliminary study suggest that partially sighted children may be at greater risk of literacy deficiencies than children who are totally blind. The study was intended to establish correlations between present literacy rates and the early reading education of high school students from 45 cities, towns, and rural communities in 11 eastern and southern states. Of 60 students in the study, 45 were legally blind from birth, had no other disabilities, spoke English as a first language, were of average intelligence, and attended public rather than residential schools.

The study also included a comparative group of 15 sighted students attending the same schools as the legally blind subjects. The 45 legally blind students were divided into three groups of 15 students each, corresponding with the initiation and consistency of their Braille instruction: Early Braille—students who received Braille instruction four to five days per week while in the first, second, and third grades. Infrequent Braille—students who received Braille instruction fewer than four days per week during the first three grades; Non-Braille—legally blind students who received no instruction in reading Braille, instead using print material and optical aids.

Ryles administered comprehension, vocabulary, and other subtests of the Stanford Achievement Test and the Woodcock Johnson R (revised) assessment tests. In comprehension tests, there was no significant difference between the mean scores of the sighted students and the group of blind students who received early frequent instruction in Braille. Nor was there a significant difference between the mean scores of the infrequent Braille group and the non-Braille group on the two comprehension tests. However, the

students who received instruction in Braille fewer than four days a week during the first three grades of school (infrequent Braille group) and the non-Braille group posted mean scores on both tests significantly lower than those of the sighted and early Braille groups.

In vocabulary, early Braille readers outperformed sighted students by a 5 percent margin on the Stanford test and nearly matched their sighted classmates on the Woodcock Johnson R test. The infrequent Braille learners, producing a mean score of 45 percent, registered significantly below the early Braille and sighted groups on the Stanford test. Legally blind students who received no Braille instruction posted a mean score 6 percentage points lower than the infrequent Braille group on the same test. The infrequent and non-Braille groups also scored significantly lower than the early Braille and sighted groups on the Woodcock Johnson R vocabulary test.

Spelling, punctuation, and capitalization scores shattered stereotypes. In the capitalization and punctuation portion of the Woodcock Johnson R test, early Braille readers produced a mean score that was 7 percentage points higher than their sighted peers, 25 percentage points higher than the infrequent Braille group, and 42 percentage points higher than their legally blind peers in the non-Braille group. In the spelling portion of the Woodcock Johnson R test, early Braille learners averaged 1 percent point higher than fully sighted readers, 32 percentage points higher than infrequent Braille learning, and 38 percentage points higher than the non-Braille group.

Before beginning work on the project, Ryles conducted a preliminary study in the state of Washington evaluating the correlation between adult literacy skills and employment. There, she studied 74 adults who were born legally blind and were patrons of the Library for the Blind. Ryles discovered that 44 percent of the study participants who had learned to read in Braille were unemployed, while those who had learned to read using print had a 77 percent unemployment rate. Those results prompted her to conduct an in-depth study exploring the childhood reading education of legally blind high school kids.

The two studies led Ryles to an inescapable conclusion: □Low-vision kids need to be taught Braille,□ she asserts. □Early Braille education is crucial to literacy, and literacy is crucial to employment.□

The article above first appeared in the Spring, 1998, edition of HumanWare□s publication, Star Student. It was later reprinted in Future Reflections.

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Proponents Say the Decline in Braille Instruction Is Leading to Illiteracy

by John Faherty



From the Editor: The following excellent article about the importance of Braille and the literacy crisis still facing blind Americans first appeared in the *Arizona Republic* on June 1, 2006. The reporter interviewed Arielle Silverman, president of the Arizona Association of Blind Students and a member of the boards of directors of both the NFB of Arizona and the National Association of Blind Students. While exploring the crisis facing blind Americans, the article also illustrates what Braille users can accomplish. Here is the story:

Can't read this? [a collection of Braille dots printed on the page] Neither can nearly 90 percent of blind schoolkids, and proponents say

the decline in Braille instruction is leading to illiteracy

Arielle Silverman has always loved to read. From *Little Women* in fourth grade to *Jane Eyre* in high school, books were a constant companion. She could slide her fingers across the page and feel the world. Those words, however, have done more than make her well read. They have secured her place in society.

Silverman, blind since birth, has now finished her junior year at Arizona State University with a double major in biology and psychology and a grade-point average of 3.9. The Scottsdale native is ambitious, thoughtful, and well-spoken. And the twenty-one-year-old is convinced she couldn't have achieved this without her fluency in Braille.

A generation ago 50 percent of blind schoolchildren used Braille, according to William M. Raeder, president of the National Braille Press in Boston. Now, he said, it's less than 12 percent. Young blind students today are still instructed in Braille, but in the past few

decades more students have been mainstreamed and no longer receive daily instruction. That is significant, because reading and writing Braille is a skill that needs maintenance. The less often a student uses it, the more likely it is those skills will diminish or even disappear.

The reduction in Braille literacy has been mollified by the fact that there are now more ways than ever for the blind to acquire information. Much of the world is moving away from words on a page and toward electronic/digital information. The proliferation of books on tape means blind people no longer have to wait to read the latest bestseller. Talking computers have brought the blind to the world and the world to the blind. These advances have placed a generation of blind young adults and children in an information paradox: they have more knowledge at their disposal, while their ability to read and write declines.

But proponents of Braille always fall back on the same argument: if reading and writing are important to the sighted, they are important to the blind. "If the literacy rate for sighted people was 10 percent, that would be a huge issue," Silverman said. "I think kids aren't being taught Braille, and they aren't being given enough time to practice."

Congenital Disease

Silverman is sightless because of Leber's Congenital Amaurosis, an inherited retinal degenerative disease. But her parents never considered not teaching her to read and write.

"I grew up thinking reading is one of the greatest joys of life," said Sharona Silverman, Arielle's mother. "Having a book in your lap is an incredible gift, and I was going to introduce that gift to both of my children." Arielle's sister is sighted. "Arielle had such a love of the written word early on. So she just flew with [Braille]," her mother said.

Because of her parents' commitment to literacy, Arielle Silverman was sent as a child to the Foundation for Blind Children in Phoenix to learn Braille. She could read by age five. Silverman then was mainstreamed into the Scottsdale schools and graduated from Chaparral High. She is now president of the Arizona Association of Blind Students.

In that role Silverman has pushed for better education for the blind, particularly an increased emphasis on Braille instruction. "Braille does not mean more than a sighted person's ability to read and write," Silverman said. "It's exactly the same. It's just the way we read what we read."

Law Debated

Arizona law starts with the presumption that blind students should learn Braille. But that law is not seen as necessarily valid by the person in charge of implementing it. "Just because there is a presumption does not mean it is not an archaic presumption," said

Joanne Phillips, deputy associate superintendent for exceptional student services with the state Department of Education.

Arizona Revised Statutes Section 15-214, regarding the teaching of the blind, states that "proficiency in Braille is essential for that student to achieve satisfactory educational progress." The law is based on the fact that Braille still is the only way blind people can read and write. But it stops short of mandating Braille instruction. "There is no statutory mandate where every child who is blind must learn Braille," Phillips said.

You can argue that it does not matter how you read *War and Peace*, as long as you know the story and the genius of Leo Tolstoy. "There is no correlation between Braille literacy and educational achievement," Phillips said.

Karen Wolfe of the American Foundation for the Blind strongly disagrees. "You can't be literate just listening," she said. "Literacy helps us think and communicate our thoughts. You will never be truly literate without Braille."

The AFB says the employment rate for the blind in this country is 32 percent. And Blindinc.org says that 93 percent of the employed blind read and write Braille. Still the rate of Braille literacy is dropping across the country. The reasons for the national decline are many, but the primary reasons are:

Mainstreaming of blind students.

Increased technology, such as talking computers and electronic books.

More books on tape.

Increased number of blind children born with additional physical or mental handicaps, often the result of premature birth.

The state of Arizona requires that the Department of Education evaluate each blind student to determine whether he or she can learn Braille, but it does not require the retention of those records. So no one knows how many students in Arizona are learning Braille.

Rehabilitation Act

The beginning of the decline of Braille literacy can be traced to a 1973 federal decision called the Rehabilitation Act--Nondiscrimination Under Federal Grants and Programs. It mandated that public schools make accommodations for children with disabilities. For many blind students it meant the ability to come home. Prior to 1973 students who wanted an education had to travel to a school for the blind. In Arizona the school was in Tucson. The education was first rate, but it was segregation for blind students.

The new law allowed children to return to their communities, to sit every day with their peers in schools that were mandated to accommodate them. But one significant flaw was with Braille instruction. Braille teachers suddenly had to travel from school to school or district to district to introduce Braille to blind students one or two at a time. It was far more practical for districts with a few blind students to get by putting textbooks on tape and allowing test-reading aids for blind students.

The prevalence of books on tape meant they no longer had to wait for Braille publications to read the latest bestseller. All blind people, not just Braille readers, could take part in a cultural phenomenon like Harry Potter. Eventually, computers with voice capabilities came on the market. Braille began to be seen as a luxury more than a necessity. Knowledge was available without Braille. Literature was available without Braille. The irony is that as Braille literacy dropped, new printing technology made Braille much more accessible.

High-tech Aids

Silverman lives in an apartment on the ASU campus. Her course load includes such classes as organic chemistry with Professor Seth Rose, in which he says things like "Heterocyclic aromatic amines are weaker bases than heterocyclic aliphatic amines."

When she gets to class, she sits with a BrailleNote laptop that allows her to take notes and review them later. From a distance the BrailleNote looks exactly like the standard laptop computer used by her peers, but instead of the twenty-six letters of the alphabet, six keys represent the six-dot system of Braille. Each letter of the alphabet is represented by a combination of the six dots.

Silverman points to this machine and others like it as an example of Braille working hand-in-hand with technology. "They are not mutually exclusive," Silverman said. "If I didn't know Braille, I couldn't use my computers to the level I need them."

But the teaching of organic chemistry is very visual. Formulas and models are used, and Silverman can see none of them. Rose helps translate some of his teaching material into a digital format that will have meaning to Silverman. If a class focuses on a particular compound, he will build a model that she can "see" with her hands. He expresses colors with different textures. He is glad to do it, he said. "It gives me a great feeling to know that when I hand a model to a student, that she can 'see' exactly what I've been talking about."

Literacy Vital

With her intelligence and work ethic, could Silverman have made it this far without the ability to read and write? "I doubt it," she said. "Would a sighted person be well-educated if they are illiterate?"

Silverman reads, writes, and takes rapid-fire notes in Braille. "I have a feeling the way our brains are designed, learning how to read opens up parts of your brain," she said. She adds that math and science notations are possible only for people fluent in Braille. They could not be replicated by books on tape or by talking computers. Silverman will occasionally listen to a book on tape, but only if she is traveling or if the book is not readily available in Braille. In high school she read *Seventeen* magazine in Braille, but now she is more likely to read a medical journal.

The American Foundation for the Blind celebrates independence and learning. It is the organization to which Helen Keller dedicated her life. So it is not a surprise how much it advocates the teaching and learning of Braille. The foundation says literacy is vital to a successful education, career, and quality of life in today's world. Whether in the form of curling up with a good book, jotting down a phone number, making a shopping list, or writing a report, being literate means participating effectively at home and in society. "If our value system expects sighted people to be literate," Silverman said, "we need to expect blind people to be literate."

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