The Importance of Handwriting: Why It Was Added to the Utah Core Standards for English Language Arts

Cindy Jones and Tiffany Hall

When the Common Core State Standards (NGA & CCSSO, 2010) were released, one item noticed by Utah educators was the relative lack of handwriting standards. Prior to adoption of the Common Core State Standards (CCSS), Utah’s Core Curriculum had included handwriting standards for Grades K-6 under Standard 8, Writing, Objective 5: Use fluent and legible handwriting to communicate. This handwriting standard had focused on producing legible manuscript and cursive writing, with an emphasis on increasing handwriting fluency and producing legible documents. However, CCSS handwriting standards are limited to one item in kindergarten ("print many upper- and lowercase letters") and one item in first grade ("print all upper- and lowercase letters"). Increasing handwriting fluency in both manuscript and cursive and using handwriting skills in document production, emphasized in Utah’s Core Curriculum, were not included in CCSS. Utah educators were faced with an important decision about the role and relevance of handwriting in literacy instruction.

Utah educators were not alone in concern about handwriting instruction in curriculum standards. Across the nation questions arose about the importance of handwriting, the need for cursive writing, and the necessity of handwriting instruction in today’s digital age.
The CCSS provided flexibility for states to add material to the Standards as approved by their governing boards. Thus handwriting standards have become a hot topic for state boards of education (NSBE, 2012). To date, several states have included additional handwriting standards as part of their State Core Standards, including Alabama, California, Georgia, Kansas, Idaho, Indiana, Massachusetts, North Carolina, and Utah. This article presents an overview of the process and rationale that resulted in the addition of the handwriting standards for Grades K-5 in the Utah Core Standards for English Language Arts.

**Handwriting as a CCSS Addition**

In September 2012 the Utah State Board of Education instructed the Utah State Office of Education (USOE) to organize a committee of teachers, principals, literacy coaches, instructional leaders, district literacy specialists, and university literacy faculty to review the need for handwriting standards. Under the direction of Tiffany Hall, USOE K-12 Literacy Coordinator, this committee was charged to “consider the research and determine whether it [is] in the best interest of Utah’s students to amend the Utah Core Standards for English Language Arts to include explicit teaching of handwriting in grades K-5” (USOE Memorandum, April 5, 2012).

Beginning fall 2012, committee members read research articles and reports and discussed the evidence base of handwriting instruction. A brief sample of the research reviewed is available at www.schoo ls.utah.gov/curr/langartelem/actions-and-programs/handwriting.aspx. The committee was unanimous in understanding the importance of explicit handwriting instruction. This work resulted in a decision to propose additional handwriting standards for potential inclusion in the Utah Core Standards.

Next the work of drafting handwriting standards began. Committee members reviewed suggestions presented in research articles, handwriting standards produced by other states, and other examples of standards (e.g., Zaner-Bloser & American Association of School Administrators, 2012). Development of the proposed handwriting standards for the Utah Core extended over several months and included multiple revisions. Committee members considered not only the specific handwriting standards, but their appropriate placement in the Utah Core Standards for English Language Arts. Similar to the CCSS, the Utah Core grade-specific handwriting standards define end-of-year expectations in a cumulative progression designed to enable students to meet college and career readiness expectations. The focus is on developing fluent, automatic, and legible handwriting; there is no expectation of a specific handwriting style. The standards are intended to leave room for teachers, instructional leaders, and districts to determine how those goals should be reached and what additional topics should be
addressed (adapted from English Language Arts CCSS; NGA & CCSSO, 2010, p. 4).

The proposed handwriting standards were submitted to the Utah State Board of Education in April 2013, with the recommendation that the Curriculum, Standards, and Student Success Committee review the suggested changes. The proposed standards were then posted online and made available for public review from April 9 to May 20, 2013. Public comments and feedback were submitted on the USOE webpage and through emails and telephone calls to USOE; the vast majority of public response was strongly positive favoring the recommended changes. Following review of public comments, the Utah State Board of Education approved the adoption of the handwriting standards on June 7, 2013. A summary of the adopted handwriting standards is presented in Tables 1 and 2. Additional information concerning the development of handwriting skills was likewise adopted for inclusion in Appendix A of the Utah Core Standards.

Table 1. *Summary of Revisions to the Utah Core Language Standards*

<table>
<thead>
<tr>
<th>Grade</th>
<th>CCSS</th>
<th>Utah Core Standards</th>
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<tbody>
<tr>
<td>Kindergarten</td>
<td>a. Print many upper- and lowercase letters.</td>
<td>a. With guidance and support, identify and write many upper- and lowercase letters, including those in the student’s name</td>
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<tr>
<td>First</td>
<td>a. Print all upper- and lowercase letters.</td>
<td>a. Independently identify and legibly write all upper- and lowercase letters</td>
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<tr>
<td></td>
<td></td>
<td>b. Produce grade-appropriate text using legible writing.</td>
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<tr>
<td>Second</td>
<td>----</td>
<td>a. Fluently, independently, and legibly write all upper- and lowercase letters.</td>
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<tr>
<td></td>
<td></td>
<td>b. Produce grade-appropriate text using legible writing.</td>
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<tr>
<td></td>
<td></td>
<td>c. Understand that cursive is different from manuscript.</td>
</tr>
<tr>
<td>Third</td>
<td>----</td>
<td>a. Independently and legibly write all upper- and lowercase cursive letters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Produce grade-appropriate text using legible cursive writing.</td>
</tr>
<tr>
<td>Fourth</td>
<td>----</td>
<td>a. Fluently, independently, and legibly write all upper and lowercase cursive letters.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Produce grade-appropriate text using legible cursive writing.</td>
</tr>
<tr>
<td>Fifth</td>
<td>----</td>
<td>a. Maintain legible and fluent cursive writing.</td>
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Table 2. *Summary of Revisions to the Utah Core Reading Standards*

<table>
<thead>
<tr>
<th></th>
<th>Reading Standards for Literature K-5</th>
<th>Reading Standards for Informational Text K-5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>CCSS</strong></td>
<td><strong>Utah Core Standards</strong></td>
</tr>
<tr>
<td><strong>Third</strong></td>
<td>10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 2–3 text complexity band independently and proficiently.</td>
<td>10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 2–3 text complexity band independently and proficiently. <em>Recognize and begin to read documents written in cursive.</em></td>
</tr>
<tr>
<td><strong>Fourth</strong></td>
<td>10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range.</td>
<td>10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range. <em>Continue to develop fluency when reading documents written in cursive.</em></td>
</tr>
<tr>
<td><strong>Fifth</strong></td>
<td>10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4–5 text complexity band independently and proficiently.</td>
<td>10. By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4–5 text complexity band independently and proficiently. <em>Continue to develop fluency when reading documents written in cursive.</em></td>
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*(Revisions to Reading Standards are shown in italicized font.)*
**Handwriting in Literacy Instruction**

The committee’s review of the research related to handwriting and handwriting instruction revealed several key areas of benefit to elementary students. Although the research extended beyond what is presented here, this section highlights ways that handwriting inclusion benefits reading and writing. The final section adds to the inclusion rationale by focusing on the significance of handwriting in a technological society.

**Reading.** Handwriting is a foundational skill that has been shown to influence reading in a rather sequential pattern of literacy development, beginning with benefits to alphabet knowledge and decoding, which provides an essential basis for higher level skills such as fluency and comprehension (Berninger, 1994). Alphabet knowledge is consistently recognized as the strongest, most durable predictor of achievement in decoding and comprehension (NELP, 2008; NICHD, 2000).

Handwriting provides a distinct advantage to students’ acquisition of alphabet knowledge. Letter forms are identified through detection of unique visual features (Townsend & Ashby, 1982). The greater the number of features shared by letters, the more difficult it is for students to distinguish them. Handwriting requires careful perception and production of the distinguishing features of each letter. The act of forming letters through handwriting builds kinesthetic and visual (orthographic) memory, thus helping students (including dyslexic students) to more readily acquire alphabet knowledge (Gallagher, Firth, & Snowling, 2000). Teaching students both manuscript and cursive helps them learn to recognize letters despite variations in letter forms, an important skill given potential variations in font styles (Berninger, 2013).

When students are able to easily and quickly identify alphabet letters (irrespective of slight form variations), they are better able to decode unfamiliar words and to quickly learn sight words and remember them long term (Ehri, 2005). Conversely, students without consistent exposure to handwriting are more likely to experience difficulties retrieving letters from memory, extracting meaning from text, and interpreting the context of words and phrases (Saperstein Associates, 2012). Due to the reading-writing relationship, handwriting instruction offers benefits to reading.

**Writing.** Instruction and practice in handwriting significantly impacts students’ writing abilities. Handwriting fluency (speed and legibility) is the single best predictor of quality and length of elementary students’ written compositions (Baker, Gersten, & Graham, 2003; Graham, Berninger, Abbott, Abbott, & Whitaker, 1997; Graham, MacArthur, & Fitzgerald, 2013). Handwriting fluency lessens the cognitive load of writing, as less attention is required to write letters and words; lack of handwriting fluency interferes with composing processes as the writer is forced to consciously attend to handwriting (Christensen, 2005; Scardamalia, Bereiter, & Goleman, 1982). Thus when planning a composition and generating content the writer must switch attention to forming letters, which causes the writer to forget ideas or plans held in working memory (Graham, Harris, & Fink, 2000). Working memory is specifically linked to literacy scores for younger children (Gathercole, Pickering, Knight, & Stegmann, 2004). When young writers must use a significant amount of memory for lower-level formative processes, they have less working memory for composition tasks. As students progress in school, slow handwriting fluency can tax the capacity limitations of students taking notes while engaged in a lecture and decay the information in the working memory (Piolat, Olive, & Kellogg, 2005).

Due to these issues of attention and working memory, handwriting fluency accounts for 66% of the variance in the length of compositions at the primary grade levels and 41% in intermediate grades, also for 25% of the variance in the quality of written expression at primary grade levels which
increases to 42% of the variance at intermediate grade levels (Graham, Berninger et al., 1997; Graham, MacArthur, & Fitzgerald, 2013; Troia, 2009). In other words, students who lack handwriting fluency produce significantly shorter compositions with a greatly reduced quality of writing, especially in elementary school (Medwell, Strand, & Wray, 2007, 2009).

Unfortunately, handwriting difficulties constrain students’ development as writers, as they develop a mindset they cannot write, learn to avoid writing, and establish an approach to writing that minimizes the use of important writing processes such as planning and revising (Berninger, Mizokawa, & Bragg, 1991). Students who lack handwriting fluency continue to struggle to meet the demands of school and of higher level written work necessary for college and career (Connelly, Dockrell, & Barnett, 2005). Graham and colleagues (Graham, Berninger et al., 2000; Graham, MacArthur, & Fitzgerald, 2013) explained that handwriting is causally related to writing and that explicit handwriting instruction is vital to prevent writing difficulties. Clearly handwriting instruction and writing skills practice are essential for the literacy development of elementary students.

Handwriting in a Technological World

Recent studies have emphasized the continuing importance of handwritten communication in today’s technological society, as younger students handwrite nearly 90% of their schoolwork and older students at least 50% (Cutler & Graham, 2008; Saperstein Associates, 2012). Berninger (as cited by Zubrzycki, 2012, p. 13) explained, “When students struggle with handwriting, people usually think, just put them on the computer. It turns out that many of the problems relating to why they have trouble learning handwriting might also affect how they use a keyboard.” In fact, there is a high correlation between handwriting speed and typing speed; students who do not demonstrate automatic writing often struggle with automatic typing (Connelly, Gee, & Walsh, 2007).

Fluent handwriting may also offer cognitive benefits to students as information is retained more efficiently and understood better when written by hand rather than typed on a keyboard (Peverly, 2012).

Research has shown that handwriting, not keyboarding, activates brain regions associated with thinking, short-term memory, language, and neural processing in the visual system; cursive is particularly linked with brain regions of self-regulation and mental organization and helps students learn to “connect things” (James, 2012; NSBE, 2012).

The connection between writing by hand and developing the ability to compose is significant enough that researchers suggest that teaching handwriting as an initial skill should be replaced by keyboarding only if a student’s handwriting is so poor as to render it impossible to meet the writing demands of school and only after all other teaching methods have been considered (Handley-More, Deitz, Billingsley, & Coggins, 2003). As noted by writing expert Steve Graham, “We don’t live in a handwriting world, and we don’t live in a digital world. We live in a hybrid world” (as cited in Zubrzycki, 2012, p. 13).

Handwriting is often required for completion of honor statements on college entrance tests, job applications, and other professional and personal correspondence. Researchers have documented that handwriting is a criterion
used to judge a person’s intelligence, education level, competence in composing, and quality of work (Sheffield, 2000). Essays that have been recopied to vary only in legibility received significantly different scores (even by experienced evaluators) based on the handwriting: Neatly written versions received substantially higher scores for the quality of content (Briggs, 1970, 1980). A person’s ability to communicate in writing is compromised whenever part of the text is illegible.

Utah also chose to include standards for reading cursive script, recognizing the importance of authentic documents in supporting instruction in the content areas. Although students’ ability to read and comprehend documents written in a variety of cursive styles has not been extensively addressed by research, anecdotal evidence suggests that students with limited experience reading cursive script struggle when confronted with real or facsimile handwritten documents. The standards acknowledge the importance of inquiry and evidence gathering in content areas such as social studies/history, English/language arts, science, etc. using primary source documents. Abraham Lincoln stated, “Writing is the great invention of the world . . . enabling us to converse with the dead, the absent, and the unborn, all at distances of time and space” (as cited by National Commission on Writing, 2003, p. 36); throughout the Lincoln Presidential Museum are numerous documents handwritten in elegant cursive. Ability to read cursive script affords students the opportunity to communicate and learn from all “distances of time and space.”

Conclusion

In order to read and write for a variety of purposes and across contexts, students must be able to fluently recognize and produce manuscript and cursive writing. Two years of handwriting instruction in the kindergarten and first grade are insufficient for students to develop necessary handwriting skills. Teaching handwriting is critical from preschool through high school; students should be educated to be “multilingual by hand” (Berninger, 2013). The handwriting standards of the Utah Core are intended to best serve the present needs of elementary students. They build on the current evidence base of effective literacy instruction to gradually scaffold student acquisition of handwriting skills across the grade levels, with a focus on building fluency and applying skills as students engage in grade-appropriate reading and writing tasks across the content areas.

References


Connelly, V., Dockrell, J. E., & Barnett, J. (2005). The slow handwriting of


