

The boys' handwriting is never as good as the girls', is it?

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Abstract

In recent years teachers have concentrated on composing; handwriting has not been a big issue. However, some surprising new research suggests that handwriting intervention can actually improve the composition of many children, particularly boys. At a time of concern for boy's writing, this is a totally new approach to the daily struggle that so many children face.

Handwriting today

My son's Year 1 teacher said it: "The boys' handwriting is never as good as the girls', is it? He'll catch up!" I nodded gratefully and toddled off, reassured. My experience as a teacher and as parent suggested that she was right and anyway, no teacher would judge written work on the basis of handwriting these days, would they?

No - they would not. After two decades of emergent writing, process writing and the teaching of genres we know that composition is what counts. For example, in the SATs, handwriting accounts for a mere 3 possible marks of the 40 (KS1) or 50 (KS2) marks for writing. In England schools generally teach a very efficient, simple handwriting script and tend to include exit strokes and promote joining as early as possible in the belief that this promotes good spelling.

Handwriting appears in the word level objectives in the NLS Framework for Teaching (DfEE, 1998) only until Year 4, after which handwriting does not appear as an objective. The widespread assumption that handwriting is a motor skill that will have been mastered by this time is common in publications about writing and goes largely unquestioned.

New perspectives

However, there has been a major programme of structured research undertaken over the last ten to fifteen years (e.g. Graham *et al*, 1997) which has investigated the role of

handwriting in writing and, crucially, studied the effects of handwriting on composing. This research demonstrates that handwriting is critical to the generation of creative and well-structured written text and has an impact not only on fluency but also on the *quality of composing*. This is a totally new proposition.

The findings of this research are extremely significant. Firstly, it has been established that handwriting is far from a purely motor act. It has been called “language by hand” and research suggests that the ability to recall letter shapes to mind and to write these automatically contribute *more* to handwriting than motor skills.

It is the orthographic-motor integration of handwriting - that is the ability to call to mind and write letter shapes, groups of letters and words efficiently and effectively without allocation of cognitive attention, that appears to be a very significant part of writing that has been largely overlooked in education (Berninger, 1994).

The need for automaticity in handwriting

The key issue is how writers use the limited working memory available to them as they compose. Writing demands that a writer engages in several processes at once: idea generation, planning, revising, word choice, spelling, audience awareness and style as well as handwriting. Models of the writing process are used to theorize how writers do this using the very limited amount of short term working memory available to them. One answer would be to sequence the tasks and do one task at a time. This is often an approach taken in classrooms – ‘get the ideas sorted out first, and we’ll worry about the spellings after’. But this approach is actually very difficult with a complex skill like writing, because the component processes of writing recur and overlap considerably. And, after all, if you defer the handwriting or typing element of writing to reduce the demands on working memory, nothing gets written down!

The solution seems to be to make sure that lower level processes like handwriting are automatic and require no conscious attention. When a process like handwriting can be

done swiftly, accurately and without the need for attention, that attention, or working memory, can be used for higher order processes - like composing text.

If we accept that handwriting skills can have a vast impact on writers' abilities to generate sophisticated text, it does appear to be critical that children develop smooth and efficient handwriting. We do not know how many children lack automaticity in their handwriting in England. The statutory assessment undertaken by most children (at 7 and 11 as part of the SAT) does not assess handwriting speed and there is no national screening for handwriting problems. From a review of handwriting research between 1980 and 1994, the estimate is that between 12 and 20% of school aged children experience handwriting difficulties, and other estimates have been as high as 44%. There certainly seems to be a strong gender effect. Girls are generally better handwriters than boys, both on measures of overall quality and of letter formation. Girls also tend to write faster than boys.

This is an important detail if handwriting does have an impact on children's ability to compose in the primary years. If boys are less likely to get the necessary automaticity in handwriting at the expected age, it may be that this interferes with their ability to compose. At present, there is considerable concern in England about boys' underachievement in writing. In the annual SATs, boys consistently do worse than girls at writing but the data that is collected cannot reveal how handwriting is implicated in this. The issue of handwriting has also not been a focus of projects aimed at addressing underperformance in writing by boys. For example, in one recent project to address boys' underachievement in writing (UKLA/PNS, 2004) the boys most often cited technical aspects of writing – including handwriting and spelling- as a reason they disliked writing. Some of the teachers involved in the project “were particularly concerned about the higher than expected number of boys who seemed to think that writing was restricted to spelling and handwriting. This allowed consideration of the point that pupils will make apparently restricted or negative comments because they do not have an extensive vocabulary to talk about writing” (p9) This is a possible assumption, but it is also

possible that the boys simply find handwriting and spelling interfere with their composing.

Can we teach automaticity?

There have been some interesting studies of the effects of focused handwriting practice. Two studies have been undertaken in Australia (Jones & Christensen 1999; Christensen, 2005) using a simple alphabet writing task to identify children who have problems with automaticity in their handwriting. One study measured the orthographic-motor integration, reading and written expression of 114 children in Year 2 (aged 7) before and after an eight week long handwriting programme. The children undertaking the programme showed significant improvement in their handwriting and, crucially, in their *composing skills*.

A second study of 50 older children (year 8 and 9 in secondary school) measured their orthographic-motor integration and written expression before and after an intensive handwriting programme. A control group did journal writing for a similar period. Although both the journal and handwriting groups were equivalent at the start, the scores for the handwriting group after eight weeks of intervention were significantly better on all measures. At the end, scores for the handwriting group were 70% higher in orthographic-motor integration and 46% higher *in quality of written text* than the journal group. The handwriting group also wrote approximately twice as much text as the journal writers in the second test. In other words, the handwriting training had improved the composition of the children much more than had the journal writing.

These studies offer convincing evidence that handwriting intervention can make a difference to the composition of children with poor automaticity (and to their handwriting). By improving their ability to produce letters automatically, these young writers freed up their attention for other writing processes.

Implications from the research

The research discussed above suggests that we have seriously underestimated the role of handwriting in the composing of school children. In concentrating on the possible benefits to spelling of well formed, joined handwriting, it seems that the necessity for speed and automaticity in handwriting has been neglected in our handwriting teaching. In putting handwriting in its place we may have neglected a skill which contributes to the composing we so value. Maybe it is time to re-consider.

Handwriting, in particular automatic letter production, appears to free up working memory to deal with the complex tasks of planning, organizing, revising and regulating the production of text. In this way, automatic handwriting facilitates composing. Research undertaken into the predictors of writing competence suggests that automatic letter writing is the single best predictor of length and quality of written composition in the primary years (Graham *et al*, 1997), in secondary school and even in the post-compulsory education years. This is an amazing finding, given the relatively low status and lack of attention given to handwriting in school.

In the educational literature about writing, and enshrined in the English National Curriculum, is the assumption that handwriting will become automatic relatively early in writers' development, freeing up cognitive resources to facilitate composition. In America and Australia there is compelling evidence that, for many children, this is simply not true. This assumption remains untested in England, as national statutory testing does not assess handwriting speed or orthographic motor integration. We may be assessing the wrong aspects of handwriting and failing to assess the crucial issue. We can no longer afford to assume that many boys will "catch up" and gain automaticity in their handwriting later than girls, or that achieving this automaticity later will do no harm. Children who develop automaticity later will have less practice and experience of the writing skills we want them to develop because of their slow writing. This is a cyclic process whereby less writing experience produces less progress, which in turn generates less experience, the equivalent of the so-called 'Matthew Effect' in reading. Maybe it is

time to consider offering these children a handwriting intervention to improve their composing!

My son's handwriting didn't "catch up", but I'm beginning to think it might just be worth doing something about it.

Handwriting has not been an important aspect of literacy for teachers in the last decade, but it has been the subject of important research. It is time the research in this area was made more accessible to educators and began to contribute to the progress of pupils. In examining our assumptions about writing and handwriting we might be able to make writing easier for some children.

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