

*Let Children Show Us How  
to Help Them Write*

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*Abstract*

Preliminary findings are presented from a current two-year NIE case study observing the development of primary children's composing, spelling, and motor behaviors during the writing process. Handwriting is influenced by all phases of the writing process and problems unique to different stages of the writer's development. Children's earliest efforts at writing resemble their speech habits in their lack of organization. Later, when children choose their own writing topics, the language for expression, and written format, the compositions become more successful. Handwriting is one component of writing that illustrates the nature of children's decision making processes. Teachers attempt to guide the children's craft to greater clarity in drawing letters, word order, word separation, page placement, and later, in re-writing and use of prosodic techniques.

Six-year-old Toni and Jennifer paint side by side as they stand at their easels. "I'm goin' to fill this one all in with red," says Toni, as she points to the outline of a house with the tip of her brush. When Toni speaks, she sprays her words in many directions as she paints and glances around the room at the same time. She knows that Jennifer can hear and understand her words without sending them in a specific direction.

Fifteen minutes later Toni is seated in the writing area. She writes ("I love super owl and I kiss him").

Words go up, down, or across for beginning writers like Toni. Toni has been writing for two weeks and does not know yet that written words, unlike spoken words, must conform to space, have a set direction, and have specific beginnings and endings.

Toni wants to write about "super owl." Even though she is just learning how to control the pencil and use space on the paper, it is the urge to tell that makes her write from 250 to 300 words per week without specific assignment. Toni writes this much because she controls the topic, spelling, and the process of discovering how to get her message down on paper.

AND  
I  
KISS  
HIM

I Love Super Owl

When we let children like Toni show us their process of writing, we let them show us how to teach them. Best of all, they show us the energy source that made them write in the first place. When children do the pushing, they have control. Child control in this study is defined as child initiative. Children choose their topics, language inventions, discover space on the paper; and teachers follow, observing, solving problems with them, in order to steer their craft into greater clarity.

When children are given control of the writing process, teachers need information to know what they see, to sense the significance of different child struggles. Children's handwriting is one place where the struggle shows. But the handwriting is only one component of the writing process. Handwriting is more than the mere formation of letters on a page at one moment in time. It is influenced by all phases of the writing process, children's changes from speaking to writing, and problems unique to different stages of a writer's development.

This paper will take a broad view of handwriting. It will seek to explain handwriting performance in the midst of child development and the writing process. The information has come from preliminary findings in our study—A Two-Year Case Study Observing the Development of Primary Children's Composing, Spelling, and Motor Behaviors During the Writing Process, funded by the National Institute of Education.

Through this grant from NIE, we are following twenty children over a two-year period. Each day three full-time researchers are with the children, carefully recording data as the children compose. Composing is broadly viewed from the child's drawing, painting, working with crayons, pens, pencils, to the composing of first, second, and third drafts. The data come from collections of all forms of composing, direct observation of the child writing, and video tapes made during the composing process.

This in-depth study of children's composing is not a controlled design. Rather, it is a case study of twenty children—in grades one and three—who were chosen because of their *differences* on a pre-selected developmental composing scale. The study seeks to describe in detail the “what” of composing in order to explain the “why” of child behaviors during the writing process.

Children have a strong urge to write. They like to see their own scratches and marks everywhere: hearths, bedroom mouldings, bathroom walls, moist windowpanes, paper bags, old envelopes, and sidewalks. They want to be seen and heard.

Speech comes before writing. Since they are both communications—and speech comes first—it is only natural that writing should bear the imprint of speech. Children try to make writing like speech, but early attempts to make them the same lead to crude messages and script that is often unintelligible to both writer and reader. Speech and writing simply are not the same. Only advanced writers can make writing sound like speech.

Children do not need to be aware of the process of crossing over from speech to print. They don't need to be aware of the steps of learning to write any more than they needed to be aware of learning to speak. Children are so delightfully self-centered that their high assumptions about message quality provide a natural cloak of protection for both problem solving and experimentation. Remove this cloak and the child suddenly becomes unnaturally aware of the rigors and demands of the writing process. Their urge to write is relentless enough for parents and teachers to just let it happen. Their role is to sense the child's intentions, note what aspects of transition stand in the way, and then provide help.

The data here show children's changes from speech to print. The data are reported in four sections starting with drawing, since drawing and writing are much the same for children. Next come

child discoveries of word order, separation, and page placement. Then, when redrafting appears, new uses of space and handwriting are reviewed. Finally, the significance of child use of prosodics in speech and print are discussed. In each section, examples of child behavior have been chosen from a large body of data to illustrate common child practices.

### *Drawing*

Toni drew before she wrote, “I love super owl and I kiss him.” When Toni drew, she chose the subject and gained control of the information as she sketched in the figure of a flying owl. As Toni drew she supplied the energy and information for her teacher to help her with the writing. Drawing is the driving force behind much of Toni's writing. It serves as a rehearsal for the text as well as an important bridge from speech to print.

Toni needed to draw because the drawing helped her know what to write. Teachers will see beginning writers like Toni draw before they write if they give them the right paper. The right paper has a large space at the top where children can draw, or at least is plain, unlined paper with large enough space to permit both drawing and writing.

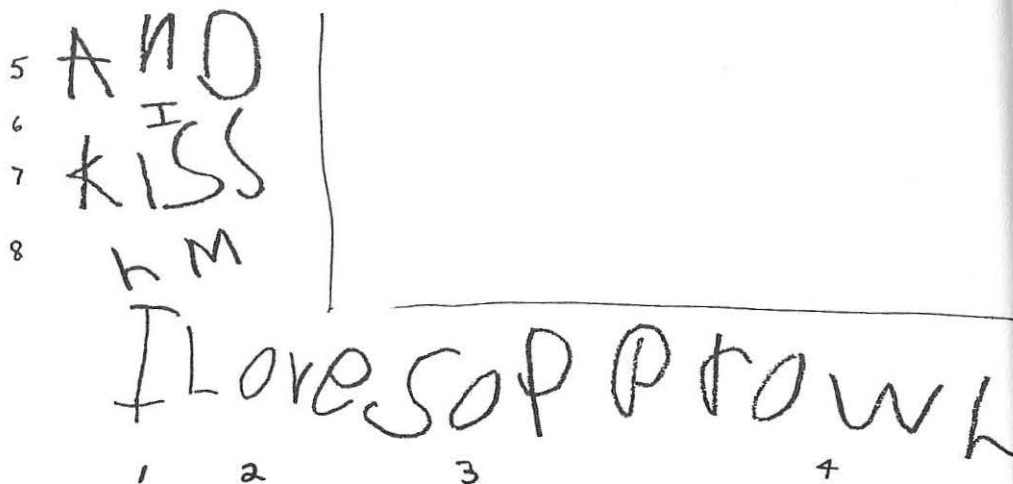
Teachers can find out for themselves what drawing does for writing. Ask children before they draw, “Tell me, what will you write after you finish drawing?” If drawing is important, they do not usually know what they will write until they draw. On the other hand, when the drawing is completed and the teacher says, “Now tell me what you will write,” she will get a more specific statement about what the child will write.

Drawing helps children change from speech to print. When John is seated next to Fred in a sandbox pushing mounds of sand with his bulldozer to make a fort, Fred knows what John means when he says, “This is gonna keep out the bad guys.” Fred can see what John means because the situation tells him. But when John writes, he must supply words to describe the situation in which the message will fall. If John can draw before he writes, he creates the setting for his print, thus helping both himself and the child who will read his paper.

When children control their subjects, they write more, gain greater practice in writing, and ultimately care much more about

the appearance of their letters on the page. For the beginning writer, drawing is one important means of maintaining that control.

When Toni first drew figures of people, they were large, turned on their sides, and occupied different parts of the paper. She was learning proportion, control of the instrument, and how to use space contained in the paper. Toni continues to discover space when she writes. Note again Toni's message about "super owl" ("I love super owl and I kiss him"):



### Space

In this instance, words flow from left to right (1-4) as well as from the top down (5-8). On other occasions, Toni will send a column up from the right hand side of the page, just as in this instance, she came down from the top of the left side. Toni generally understands that words go from left to right as shown in steps 1-4. But she has a dilemma. Step 4 falls in the lower right hand side of the paper. She has run out of space. It is hard for children to predict with accuracy where the full message will end. Since there is a drawing on the page, the message needs to go with the illustration. She solves the problem by coming down to the line on the left side. Adults may consider this a major problem. It is not to Toni. She knows the meaning of the message; at this point in her development she is satisfied with just the placement of message ingredients

on the paper. She assumes that if she knows the message, others will know as well, regardless of a lack of left to right order.

Toni writes as she speaks when words run together in steps 1-4. Words run together without spaces in between. When Toni read this selection, her voice rose and fell just as the words undulated across the page. Toni's intention to simulate speech seemed almost deliberate since her addition of steps 5-8 shows her knowledge of word units.

Six-year-old John wrote, "Ste fosd," for Steve Austin. John was trying to tell where one word ended and the other began. For John, words in speech flow together like "hamaneggs." All children at some stage in their writing must go through the process of separating words from speech into discrete units.

### Further Adjustments to Space Problems

About the time young children develop good letter formation, with a left to right flow and spaces between words, new problems of space arise. The problems are caused by new information, the beginning of redrafting. The discovery of new information without any place to put it can come as early as six years of age. Six-year-old Chris had just read a book about prehistoric animals and was composing one of his own to share with the children. Chris and his teacher had this dialogue:

Teacher: I see that you were able to put in the word "may" to show that "Brontosaurus may travel in families." [Chris had been able to sandwich in the small word without erasing.] But you didn't say why they travel in families.

Chris: They travel in families to protect the young.

Teacher: Do you think that is important information?

Chris: Yes, but there isn't any place to put it. [The writing goes from left to right over to the right hand margin at the bottom of the paper. Above this writing is a picture of a brontosaurus.]

Teacher: Look the paper over and show me where you could write it in.

Chris: There isn't any [voice rising].

- Teacher: Look the *entire* paper over and put your hand on any space where there isn't writing or drawing. [There is space above the drawing.]
- Chris: Well, I could put it up here [motions to top of the paper] but it would look stupid. The other part is down here.
- Teacher: How could you show they were connected?
- Chris: I could put an arrow down here pointing to the part that's at the top.
- Teacher: Good, but you'll need to connect the arrow with the top. This is what writers do when they are getting their books ready for the publisher.

Chris knew additional information would create a mess. His usual approach was to erase words to put new ones in. Now his teacher had shown him how to control new information when there is a problem of space. She had also shown him that this draft is temporary, that a rewriting is necessary. Young writers need to learn a whole repertoire for messing up their paper to deal with new information, organizations, and adjustments. This also adds to the importance of crafting the letters in the final draft. If children have controlled the process, know their information is good, the quality of their handwriting improves.

Just as children learn the appropriate use of language within the family, the playground, or school, they need to learn the context of various kinds of handwriting and different uses of space. Most handwriting texts do not deal with the appropriateness of handwriting in context. Rough draft handwriting is not the same as handwriting in final draft form. Children who are preoccupied with word shape or correct spelling in an early draft lose control of the draft and their information suffers.

Children show us in their handwriting when they take on the draft concept. Eight-year-old Andrea, like many writers, hoped her first draft would be her last. About the sixth word into this selection, her handwriting shows that she decided another draft would follow:

Learning to fly  
 Once when I was very little I got a  
 hand to fly so I tried jumping  
 of things and tried to float up  
 and across I tried and  
 tried til my father made me  
 and my sister big cardboard  
 butter fly... wings.

Later, Andrea went on to draw arrows, cross out lines, until the message was shaped to her liking. Handwriting, in final draft, properly dealt with the aesthetics and etiquette necessary for good communication.

*Prosodic Features Show Us Children Are in Control*

Eight-year-old Scott did not like to write. He wrote at four words per minute with no spacing and over 45 percent of his words were misspelled. Letters were of various sizes, ran together, and were poorly formed. In October Scott's writing looked like this:

I was Divn in the Serwola and as an  
to cars crashing and I am crashing not into  
them but I turned down way and then I turned

Since October Scott has been required to write but with this difference: he controls the topic, information, and language. He also gets help from two audiences: the teacher and other children. Help comes principally at the point of clarifying Scott's understanding of the information and the appropriateness of the meaning he wants. Help comes in early drafts, then Scott rewrites for final copy. Two months later Scott's writing looked like this:

Scott showed that he had re-entered the writing process on his own terms through speech features marked in the written text. Children try to "speak" through their texts when they feel they have control. The elements that show this kind of involvement are called prosodic features. The use of these features put sound, stress, pause, and intonation back into writing. Toni showed her use of prosodic features when she made important words large and her words undulated across the page as in the rise and fall of speech patterns. Scott, along with other children striving for "sound," show early voice through:

I was going down the stairs and  
I took two steps and!! Then I slipped  
and fell down fifteen steps on my back.  
Ow yikes then on the last step I  
went boom!! I was aching and I was  
in pain. Then I said I am never going  
to go down those stairs unless I have to. And  
my brother said, "Well if you had on your shoes  
it wouldn't have happened." And I said Shutup.

*Use of capitals.* Important words, especially nouns that carry major meaning, are written in capital letters. Other words may have a single capital letter at the beginning.

*Rewritten words.* Words or letters that mark key points will be run over several times with the pen or pencil. Words blackened more than others show points of emphasis from speech.

Exclamation points and interjections also put sound back into written language. When children first discover them, their delight in simulating sound leads to the excessive use of these prosodic features. For example, sentences of minor importance receive one exclamation point, whereas those of greater importance receive from two to four. The loudest and breathiest of all receives a large, blackened exclamation point that takes up two lines on the vertical.

Six-year-old Jenny needs to produce sound as she writes. It is her method of developing a voice, staying oriented in space, producing the right sound and symbol, as well as in maintaining control of the writing process. Through a very sensitive microphone tied in with a video recorder, the data show that Jenny's writing contains a high ratio of sound to written symbol, thus marking more clearly how much oral language must accompany

Figure 1. The relationship of sound to written symbol in Jenny's message: "All of the reindeer loved them," written as "Loll ave the reindrer love em."

LINE 1:  
*Track I:* l all, all, of, all of the, the, the, all of the reindeer  
 (sounded) s  
*Track II:* L oll ave the  
 (written)

LINE 2:  
*Track I:* rein, ruh, rein loved them, all, of, them, the, muh, muh  
 (sounded) S S S  
*Track II:* R iendeer love e m  
 (written)

writing for her to make an effective transition from speech to print. A sample of the data in Figure 1 shows a typical ratio for both Jenny and other writers at this stage of development. Track I shows Jenny's sound and Track II shows at what point the letter was written in relation to the sound on Track I. For example, in line 1, Jenny sounded an "l," said "all" and wrote an L.

Children hear themselves say what they mean and go on. Therefore, they speak along with the writing and the speaking is an essential part in the composing. Transcriptions from other beginning writers show a wide range of voicing types. Thus far we have classified these voicing patterns:

<i>Type of Language</i>	<i>Example</i>
1. Says the message <i>before</i> it is written.	"The boy will go."
2. Says the word <i>before</i> it is written.	"boy"
3. Says the word <i>after</i> it is written.	"boy"
4. Rereads message <i>after</i> it is written.	"The boy will go."
5. Makes sounds of letter components.	"buh, buh, oi, oi"
6. Says letter names for spelling	"b-o-y"
7. Procedural statements:	"I haven't got any more room."
8. Statements to other children.	"This boy is goin' to blow the bad guys up."

With the exception of statements to other children, voicing is only intended for the child who is composing. A person standing nearby is unaware of most of the sounding, since only the sensitive microphone can pick up these data.

### Summary

Children need to control their own writing. But they can't do it alone. Teachers need to help them maintain control because when they are successful, children see themselves as important learners with things to say. Furthermore, when children control the writing process, they write far beyond traditional expectations, spell better, and take pride in the craft of handwriting.

It isn't easy to help children control their own writing. Teachers need information to know when and how to help. Preliminary research from this study of children's composing shows that handwriting is a critical index for showing where to begin to help children.

When children first write, they treat writing as speech. They draw to supply context for the subject, run words together, spell words as they sound, let words run around the page, speak out loud when they write, blacken in letters, use capitals and exclamation points liberally.

Redrafting demands a new view of space and aesthetics. Just when the child has solved early problems of space, new information demands different help from the teacher. But this new step is a boon to good handwriting. When the craft of handwriting follows the crafting of the child's *own information*, a greater level of excellence in final copy is achieved.

Today Toni isn't bothered when her words run together or down the side of the page. Tomorrow she will be. She will need to see another way to handle the problem. Her teacher will need to know how to help Toni. Good teachers see these disturbances, and ask timely questions to show children how to solve problems for themselves. They ask good questions because they know how children learn to write.

## A Dynamic Approach to Teaching Handwriting Skills

Iain Macleod  
and Peter Procter

### Abstract

A computer-based system for teaching handwriting skills has been developed, using a graphic display screen and a hand-held "pen." The system is such that exercises can be completed only by executing the required sequence of strokes in the specified order and direction and within a preset accuracy. In the simplest presentation, a thin guideline is displayed for each stroke in turn. The computer responds to correct pen movements by leaving a thicker track behind. Incorrect pen movements are ignored and a blinking spot calls attention to the point where the pen should be. The resultant visual pattern is the teacher's well-formed example rather than the student's actual strokes, thus reinforcing the appearance of the desired result rather than the student's possibly ill-formed attempts. The system emphasizes the process used in creating cursive writing as well as the appearance of the product and, in one application, has been used to teach fluent signatures to intellectually handicapped students.

The process used to create cursive script has subtle yet profound effects on the appearance of the product. A computer-based system which gently but insistently fosters conformity to a dynamic specification for the creation of cursive script has been developed at The Woden School in Canberra as part of a collaborative project with The Australian National University Department of Engineering Physics. An overview of earlier work in this project which concerns the application of computer techniques to assessment and development of basic skills in intellectually handicapped children is given by Macleod and Overheu (1977).

Many aspects of presentability need to be considered for handicapped students seeking open employment. As they enter the adult workforce it becomes necessary for them to fill out job applications and to sign various documents (such as pay receipts). It is especially desirable to be able to sign in cursive writing rather than printing. There are, unfortunately, many students who cannot sign their names in an acceptable manner and who thus reduce their chances of obtaining open employment (even when ability to write is not a prerequisite skill).