



JAMES M. WALLACE

*At the beach
I found a pit
I played in the pit.
my mom and dad bout two and a half
pounds of salt water taffy.
I wrote a note and roled it up and put it in
a bottle I thre it in the ochen
I flew a kite the kite flew off the string.*

The author of this narrative is a curly-haired six-year-old who is in his last month of kindergarten. He printed the story on wide-

lined pink primary paper and then propped it up on the back of an IBM Selectric III so he could read it as he typed. When I sat down next to him on a low chair, knees tucked under my chin, he ignored me completely, but continued to type, searching the keyboard with intense concentration for each letter. When he finished, I asked: "Can you read me your story?" He did so, rapidly and accurately. Next question: "Do you like to type?" "Yes." Final question: "What do you like best in here?" "The computer."

Write First, Then Read

In another school, a kindergarten girl brings her printed story to a visiting administrator. The text reads: "I see a hors and she is thinking about another hors." The cartoon-style illustration shows a large horse with a thought-balloon over her head; inside the balloon is a smaller horse. The administrator says, "I like it," and the girl runs cheerfully off to her next activity.

At a third school I find this story on the bulletin board: "I went to marys house on tuesday we turnd over puzz pecis and we at mufins." Tacked up nearby is this message from a boy who has brought his emotions to his writing: "if thees are my tois wy cant i thro them out the window, if this is my bruther y cant i punch him."

This forceful writing and invented spelling is being created by kindergarten and other primary students in a "Writing to Read" program in Portland, Oregon. The Portland schools, which joined the program in the fall of 1983, are drawing on the experience of other schools and districts that have worked with the system since 1977. The program was developed by John Henry Martin, a retired educator who believes that children can learn to communicate more effectively and rapidly if their early education stresses writing first, rather than reading. Working from this assumption, Martin gradually created materials and learning sequences to try out with children. He also persuaded the International Business Machines Corporation (IBM) to provide typewriters, personal computers, cassette players, and printed materials needed for experimentation with the system.

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Kindergarten students in the Portland, Oregon, Writing to Read program are learning to use typewriters and computers to write creatively even before they begin using conventional spelling.

Writing to Read has received much attention in both the educational and the popular press. Its early results have been so positive that a number of writers have hailed it as a possible partial solution to America's literacy crisis. At the request of Martin and IBM, the prestigious Educational Testing Service is conducting an extensive analysis of the system. And individual districts, like Portland, are conducting their own evaluations.

For those of us influenced by the educational ideas of Dewey, Ashton-Warner, Freire, and the language-experience approach, the system has a strong attraction. It begins with the natural language of children and provides a variety of ways for them to express their language. It proceeds from the assumption that children are curious about language, as they are about other aspects of their lives, and that—with support and encouragement—they will use that curiosity to develop their power over language. It begins with the active process of writing rather than the (usually) more passive process of reading. It stresses creation first, followed by correctness later. It uses student "errors" (they are not so labeled) as a means of learning about the inconsistencies of English spelling. Although its developers do not so describe it, the system appears to put the old progressive wine of "learning by doing" in the new bottles of advanced technology.

All of this was intriguing enough to me so that I recently undertook my own search for usable truths about Writing to Read. This search led me to five of the 14 schools in which Portland is trying out the system, to administrators who are responsible for implementing and monitoring it, and to researchers evaluating it. Consistent with the Writing to Read approach, in my description I'll stress the *process* of

this inquiry as much as the products of it.

The Child's View

I began by trying to get a child's-eye view of this program. I did this literally, attempting whenever possible to sit down next to students on little plastic chairs, seeing the equipment, materials, and adults from their perspectives. A typical class begins as the kindergarten children, accompanied by their teacher, enter the Writing to Read (WTR) laboratory. They look like they have been assembled for a United Nations presentation: blacks, whites, Asians, redheads, blondes, brunettes. There are 22 of them, and they fan out around the room to their pre-assigned stations. Four sit down at the typewriters and begin to compose or type stories they have printed by hand. Three pick up "Punch-a-Shape" cards (not part of WTR) and learn the shapes of letters by punching them out. Four go to stations where they follow along in picture books while they listen to taped stories. Three go to a writing table to compose their own stories on wide-lined paper. Four work at a table where they trace letters in work journals. And four others go to computer terminals, put on earphones, and type words in response to printed, graphic, and auditory messages.

Four adults—their teacher, an aide, a building Writing to Read coordinator, and a parent volunteer—move unobtrusively around the room helping students remember where they left off yesterday, suggesting starting points for today's activities, finding materials, and encouraging their efforts to learn.

The atmosphere is that of a good kindergarten room: students are interested but not frantic; there is a pleasant murmur of conversation; children work together at various learning centers; adults are quietly easing students

into learning activities. The difference is in the technological richness of the room. In addition to the usual papers, pencils, chalk, workbooks, games, puzzles, and books, there are tape players, IBM Selectric III typewriters, and IBM Personal Computers. And by late spring, most of the students seem to feel as comfortable with all this machinery as with the more traditional classroom materials. They insert paper into the typewriters, search out the letters they want, press the return key and space bars, and back-space to make corrections. They find the tapes that match the books they want to read and insert them in the cassette players. They require more help with the computers, but work quite skillfully on particular sequences.

The computer is seen as the new element of the program, so let's watch another kindergarten student as she works with the system. She sits down at the computer, a boy at her side, and puts on earphones as the teacher inserts the diskette for Cycle 3 and gets the program started. A picture of a leg appears on the screen along with the letters l-e-g. The picture disappears and the word remains. In response to audio instructions, the girl presses the letters l-e-g on the keyboard. As she finishes this, the letters return to their proper places around the margin of the screen. The audio tells her again to write l-e-g, and she again spells it out on the screen. The letters l-e-g shimmer and move on the screen, helping the girl to focus on them and to ignore any distractions (which are, in fact, minimal in this room). After satisfactorily completing this process she goes on to the word "three."

This girl has already learned, through the first two cycles, to write cat, dog, fish, pig, sun, and bed. In cycle three she has learned "rabbit," and is now practicing with "leg" and

“three.” As she completes the ten cycles she will learn to type 30 words. The girl and her fellow students learn, through these computer programs, how to use the 26 letters and the 42 phonemes they will need to write English phonetically.

The Educator's View

A shift to the perspective of adults may help to put this girl's experience in context. As I visited classrooms, most aides, teachers, and parents were so busy helping children that I asked them few questions. I did observe, however, that they were calm, patient, and helpful. The equipment and activities were so engrossing to most students that the adults could concentrate on the human parts of their work: motivating and encouraging students, helping them get “unstuck,” prompting them to talk about what they had written or read. But between periods I was able to get some response to the program. One aide said that she likes Writing to Read because “the kids *do* something—and think.” A parent volunteer expressed enthusiasm for the program's stress on phonics. She liked working with Writing to Read because it enabled her to give her son realistic help at home.

However, the greatest enthusiasm for Writing to Read was expressed by district curriculum administrators and the building coordinators of the program. One noted that students come to school eager to write, and WTR enables them to do so quickly and satisfyingly. He noted that because the children are interacting with the computer, they feel they are in partial control of what they learn. Another stressed the advantage that students have when they get early familiarity with the keyboard, both on the typewriter and the computer. He also described Writing to Read as an excellent

remedial program for students who had difficulty with phonics. Another said that the program is very motivating for students, that the learning stations help them focus on specific skills, and that WTR is “the best available application of the language-experience approach combined with technology.”

But school personnel are not being swept off their feet by the system. Most have been around schools long enough to have seen panaceas come and go. They are willing to give the program a good try but are not blind to its defects. They notice the occasional student sitting bored at the computer after too many repetitions of “rabbit” and hit the “escape” button for him. They see deficiencies in workbooks, such as the lack of direction signs to help students form letters easily. They see the need for a better

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integration of writing and reading activities, and for some emphasis on comprehension. Several noted that students object to the unnaturally slow pace of the reading on the tapes. Some believe that the program still needs to develop more sophisticated and more interactive software. But all six of the administrators and coordinators with whom I talked see these as problems that can be gradually worked out, either by national Writing to Read developers or by district personnel. All see the program as helpful to children and want to continue to work with it.

The Evaluator's View

With these mostly positive impressions in mind, I next went to Portland Schools' new administration building, where I had been invited to sit in on a meeting of researchers who are responsible for monitoring and evaluating the system. One of them described their three-year task of evaluating an over-publicized program: in the first year they will “just blow the foam off it”; the second will be a “shake-down” year; and the third will be the real evaluation.

Their effort will supplement the Educational Testing Service (ETS) study of Writing to Read. Only 15 of Portland's classrooms are included in the ETS sample, but Portland will study all 64 of the district's participating classes (approximately two-thirds kindergarten, one-third 1st grade, and a few 2nd grades). ETS is not doing systematic observations, but Portland will conduct three one-hour observations in each of 26 WTR laboratories. The California Test of Basic Skills will be used to evaluate progress in Writing to Read classrooms and in control-group classrooms. This only begins to suggest the complexity of the task facing Portland's researchers. Holding all variables constant is as challenging

as getting a roomful of squirming 1st graders to sit still on Friday afternoon. Some of the students have had pre-kindergarten and some have not; some are in half-day kindergartens and others attend all day; little baseline data is available; different schools provide varied amounts of staff support.

In the light of these difficulties, the main message from the evaluators was: interpret your impressions cautiously. They are still smarting from the response to a recent report in which the Portland Research and Evaluation Department had said: "Our existing efforts to use Computer-Assisted Instruction in the elementary schools are overall a failure." This was not the message that some administrators had expected and wanted to hear. And, considering the strong administrative support for Writing to Read, the researchers want a very careful evaluation of the system. They already anticipate that their interpretations of it may not be as "upbeat" as those that will come out of the Educational Testing Service. As one of them said, "It is likely that the national results will be positive or construed as positive." He warned against a "market-driven bias" in the ETS evaluation. And, in the light of broad claims for Writing to Read effects, he noted that it may be only a way of "accelerating movement through a narrow range of skills."

In spite of their research-oriented caution, the evaluators were willing to speculate briefly about future possibilities for Writing to Read. One noted that Writing to Read may provide a means of encouraging teachers to use a language-experience approach to teaching reading and writing. Another suggested that it might work most effectively as part of a true continuous progress model. Their comments left me with two questions to consider:

Given the expense of Writing to Read, in personnel, time, hardware, and materials, could equal or better results be obtained through other means? If the system turns out to be as effective as claimed, is this a result of the teaching strategy, the particular equipment and programs, or some combination of the two?

The Vital Relationship Between Students and Their Words

So my search for a usable truth about Writing to Read goes on. And I continue it with the enthusiasm of the participants and the caution of the evaluators. I will be eager to see if the participants can sustain their initial optimism as they and the evaluators sort out what is really at work here: New technology? More sophisticated learning sequences? New teacher roles? Learning stations? Student choice and motivation? The word "motivation" suggests one of the keys, and brings us back to the father of progressive education, John Dewey. As I sat in different classrooms, watching six-year-olds manipulate the latest products of the industrial age, I wondered what Dewey would make of all this. As I saw children working with computers, typewriters, teachers, and each other, I recalled Dewey's persuasive words:

Methods for learning to read come and go across the educational arena like the march of supernumeraries upon the stage. Each is heralded as the final solution of the problem of learning to read; but each, in turn, gives way to some later discovery. The simple fact is that they all lack the essential of any well-grounded method, namely relevance to the child's mental needs. No scheme for learning can supply this want.

Only a new motive—putting the child in a vital relation to the things to be read—can be of service here.

"The equipment and activities were so engrossing to most students that the adults could concentrate on the human parts of their work: motivating students, encouraging them, helping them get 'unstuck!'"

The Writing to Read system assumes that students will have the most "vital relation" with their own thoughts and words and those of their fellow learners. And it provides a means by which children can quickly and creatively learn to express their ideas through invented spelling that makes sense to them. With a realistic understanding of the phonetic basis of English writing, they can then securely and confidently deal with the complexities and inconsistencies of "book spelling."

If Writing to Read—and comparable systems—fulfill their early promise, teachers will have to continue to intensify the challenge of redefining their roles. They will spend less time in transmitting information and conducting drills, and more in helping students assess their "mental needs" and develop "vital relations" with the real and symbolic worlds. They need not fear being replaced by technology as they find their instructional skills enhanced by it.

Students are also struggling with these complicated relationships between themselves, the new technologies, and their teachers. Given the objectives of the Writing to Read system, it is appropriate to give the last word to one of Portland's six-year-old authors, who addressed this message to her teacher:

*I liket the tipe riter Best of all
and I like to work with you
And I liket lisoning to the story's
But best I like working with you. □*

References

- Armington, David. "Invented Spelling." *Teachers and Writers* 15,5 (1984): 1-8.
- Brandt, Ron. "On Reading, Writing, and Computers: A Conversation with John Henry Martin." *Educational Leadership* 39, 1 (October 1981): 60-64.
- Dewey, John. "The Primary-Education Fetish." In *John Dewey: The Early Works*, Vol. 5. Carbondale: Southern Illinois University Press, 1972.
- Durbin, Kathie. "Students' Stories on Computers 'Amazing.'" *Oregonian*, June 17, 1984, p. B2.

Durbin, Kathie. "Writing to Read Program Teaches Reading Through the Hands." *Oregonian*, May 30, 1983, p. B2.

"ETS to Evaluate 'Writing to Read.'" *ETS Developments* (Summer 1983).

"Evaluation Report on Computer Use in the Portland Public Schools." Portland, Ore.: Research and Evaluation Department, Portland Public Schools, 1983.

Grice, Michael, Holznagel, Donald, and Kirkpatrick, Jerry. "Managing Microcomputers: What the Principal Needs to Consider." *The Practitioner* X, 1 (October 1983).

Hawkins, Pamela. "A Test of the Theory that Children Could Learn to Read by First Learning to Write." *IPD News* 1, 3. White Plains, N.Y.: International Business Machines (1982): 1-7.

Hechinger, Fred M. "Learning Switch: 'Writing to Read'." *The New York Times*, August 24, 1982.

Leonard, George. "The Great School Reform Hoax." *Esquire* (April 1984): 47-56.

Ohanian, Susan. "IBM's 'Writing to Read' Program: Hot New Item or Same Old Stew?" *Classroom Computer Learning* (March 1984): 30-33.

Pepper, Cary. "Tiny Hackers." *Northwest Orient* (September 1983): 27-33.

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