# **ES** The ETS Evaluation of Writing to Read

## EXECUTIVE SUMMARY

July 1984

Educational Testing Service Princeton, New Jersey

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*Writing to Read is an effective educational program.* This conclusion was reached by ETS evaluation researchers on the basis of an extensive two-year evaluation of the program.

## The ETS Evaluation

The ETS evaluation included observation of the program's functioning, questioning of teachers and parents, and testing of learning in reading, writing, and spelling. The evaluation covered more than 10,000 Kindergarten and Grade 1 students in 21 sites, and in the second year concentrated on a "core sample" of 3,210 students using Writing to Read and 2,379 comparison students in classes not using Writing to Read. Measures of performance included the standardized reading tests normally used in the participating districts, a professionally-graded sample of student writing, and a standardized list of spelling words.

The evaluation study used rigorous techniques of group comparison, "before-and-after" testing, and statistical analysis to sort out the effects of the program as compared to preexisting differences in ability level. Whenever there were sufficient data, analyses were repeated on subgroups of students, such as males and females, black and white students, students of relatively higher and lower socioeconomic status, and students of relatively high and low initial achievement.

The project was led by Richard T. Murphy and Lola R. Appel, who are experienced and distinguished evaluation researchers. Murphy and Appel were selected for the American Educational Research Association's award for excellence of design for a project evaluating computer-aided instruction. They have also evaluated youth manpower training programs for the U.S. Department of Labor. Murphy is co-author of the *Encyclopedia of Educational Evaluation*, regarded as the primary reference resource in the field.

This report presents the major conclusions of the evaluation. The products of the evaluation also include a full documentation of the results.

Populations for statistical comparison were defined by these procedures:

A. The *Basic Populations* consisted of students in schools selected randomly from participating districts. These populations provide the most appropriate evaluation of Writing to Read under normal conditions of use. The schools were in their second year of implementation, and therefore had worked out early implementation problems. Since they were randomly sampled within districts, they were likely to be representative of typical schools within those districts.

- B. The *Special Populations* consisted of three schools that were selected in order to target schools with low income and high minority populations. Their districts were represented by single sites, non-randomly chosen. Therefore, the results are less likely to represent typical schools in the districts.
- C. The *New Participants* are schools randomly selected from districts participating for the first year.

## **Major Conclusions**

## **Conclusion 1: Writing to Read Works**

This conclusion is based on observations of classrooms by the evaluation team and on the teachers' reports. Some of the implementation difficulties normally expected with a complex technological innovation - especially with kindergarten students - either did not exist or were overcome early in the program.

- Students could handle the technology required: The IBM Personal Computers, the typewriters, the tape-recorders.
- Students could handle the movement from workstation to work-station.
- The system functions well as a system a complex of interconnecting parts.

## **Conclusion 2: Children Learn with Writing to Read**

On standardized reading tests, kindergarten and first grade Writing to Read students, on the average, progressed faster than the national norm samples. In the test series most commonly used by the participating sites, kindergarten students, on the average, increased by approximately 15 percentile points.

Pupil progress was charted as part of the normal functioning of the program. Chart 1 describes the writing levels used by teachers to describe the performance of Writing to Read students. Chart 2 presents percentages of students who had attained each level at three points during the program's operation – near the beginning, middle, and end. The figures show steady progress, as indicated on Chart 3. By the end of the program, 72% of the students (those in categories III, IV, and V) had progressed beyond word-level writing to the production of phrases, sentences, and, in 15.% of the cases, to developed writing, a level that is considerably in advance of normal expectations for beginning readers. These conclusions are supported by analysis of writing samples produced by students in Writing to Read and comparison students, as discussed in the next section.

## Conclusion 3: Children in Writing to Read Write Better Than Comparison Groups

The heart of the ETS evaluation was a comparative study of Writing to Read as compared to schools in the same districts not using Writing to Read. The study was rigorous by design and statistical standards.

- "Before" and "after" performance for both Writing to Read and comparison groups was taken into account.
- Statistical controls were employed to rule out alternative explanations, such as differences in prior ability and socioeconomic status.
- Analyses were replicated district-by-district, so that a district's own standardized test results can be reflected. The cumulative results include performance on most of the standardized reading tests in use in school districts.

Because there are no commonly used tests of writing ability at kindergarten and grade 1, ETS conducted a special study of writing'. Teachers collected writing samples from both Writing to Read and comparison students. They were sent to ETS, where they were scored by a procedure called *holistic scoring* - a procedure developed by ETS and used to grade essay examinations. The procedure involves these steps:

- Reading by a panel of teachers trained in the scoring process
- Pre-grading sessions to calibrate standards to arrive at common standards based on agreed-upon criteria
- Multiple grading of each writing sample, with additional reading to resolve conflicts

The graders read the writing samples "blind." They did not know from which group a writing sample came.

Chart 4 shows the overall results. The scores are on a 12 point scale (the sum of two raters, assigning from 0 to 6 points each).

In *kindergarten*, the mean ratings for all students were as follows:

Writing to Read 4.5 Non-Writing to Read 3.1

Comparable results from *first grade* were as follows:

Writing to Read 6.6 Non-Writing to Read 4.9

A special group of Writing to Read "graduates" also was included. These writers are first grade students who had Writing to Read in kindergarten. The comparison group are first graders who did not have Writing to Read in kindergarten. These were the results:

Writing to Read "graduates" 6.5 Non-Writing to Read "graduates" 5.7

All of these results indicate that students from Writing to Read write better than comparison groups. Are the results statistically significant?

Statistical significance tests were done for populations that had the same pretest standardized test scores. The kindergarten and the first grade results are shown in Chart 5. "Positive" means that Writing to Read students performed significantly better than comparison students. "Equal" means that the groups were not significantly different. In 11 of the 15 comparisons there was a statistically significant difference in favor of the Writing to Read students. In no case was there a statistically significant difference in favor of comparison students.

Do these results hold up for specific groups of students? We examined differences between Writing to Read and comparison group students in the following subgroups:

- Male and female students
- Black and white students
- High socioeconomic status and low socioeconomic status students
- High initial-ability and low initial-ability students

The results in favor of Writing to Read held up consistently in all subgroups.

In summary, ETS collected some 6,000 writing samples from both Writing to Read an Non-Writing to Read children. Writing to Read children clearly surpass comparison students in writing performance. This appears be to true across both kindergarten and first grade, in groups of children who completed Writing to Read last year, and across differing populations based on sex, race, and socioeconomic status. When we adjusted differences for initial skills of Writing to Read and Non-Writing to Read children, the Writing to Read children still perform significantly better than their peers.

## Conclusion 4: In Reading, Kindergarten Writing to Read Students Have A Significant Advantage Over Comparison Students. In Grade 1, Writing to Read Students Compare Favorably with Other Students

Chart 6 presents comparative results on standardized reading tests. The populations are those that had the pre- and post-test data on the same nationally standardized tests. All differences that are significant are in favor of the Writing to Read students. Results were replicated in subgroups of male and female students, black and white students, high and low socioeconomic status, and high and low performing students.

## Conclusion 5: Writing to Read Students Perform As Well As Other Students on Spelling

Because Writing to Read uses special spelling, there has been concern about whether students in the program learn correct spelling patterns. The developer reports that any initial problems that students may have are self-corrected as students learn correct spelling patterns. A special analysis of spelling was addressed to this question. A subsample of both kindergarten and first grade students were given a spelling test of ten words each. The items were systematically selected to be grade-appropriate, to cover a variety of spelling patterns, and to cover an appropriate range of difficulty.

The results are presented in Chart 7. Group means show that Writing to Read students perform as well as Non-Writing to Read students in spelling.

Kindergarten means:

Writing to Read 3.1 Non-Writing to Read 3.0

First grade means:

Writing to Read 6.3 Non-Writing to Read 6.0

At the kindergarten level, Writing to Read students tended to make more mistakes than Non-Writing to Read students on "silent-en words (*ride, made, home, name*). At the end of first grade, Writing to Read students made fewer mistakes than Non-Writing to Read students on all but one of the ten words (*feet*). First grade Writing to Read students performed slightly better than Non-Writing to Read students on a list of words that included the following:

- A "silent e" word: *ride*
- Non-phonetically spelled words: *could, they*
- Multi-syllable words: *anything*, *together*
- Words with consonant blends: *pretty, tree*

## **Conclusion 6: Teachers Respond Positively** to Writing to Read

Chart 8 displays information provided by teachers using Writing to Read and, where relevant, teachers not using Writing to Read. The evaluative comments are consistently positive. In addition, several comparisons between Writing to Read and Non-Writing to Read teachers deserve special mention.

- More than 80% of Writing to Read teachers report their students are *writing better than students in previous classes*. The comparable figure for comparison teachers is 30%.
- More than 60% of the Writing to Read teachers (as compared to 44% of comparison teachers) report that students are *reading better than students in previous classes*.
- Teachers using Writing to Read are more likely than comparison teachers to say they are spending more time on writing (88%) and on reading (61%) than in previous years. Comparable responses for comparison group teachers are 33% for reading and 41% for writing.
- Writing to Read teachers report that students devote well-balanced amounts of time to a variety of instructional activities in reading and writing. Writing to Read students are reported *more likely* than comparison students to spend a great deal of time on creative writing, and *less likely* to spend a great deal of time on phonic and structural analysis.

## **Conclusion 7: Parents Respond Positively to** Writing to Read

Chart 9 presents responses by parents of Writing to Read and Non-Writing to Read students.

- Parents like Writing to Read and report that their children like it.
- Ninety-three percent of parents hope their school will continue to use the Writing to Read program.
- Parents of Writing to Read children report greater

progress in *reading* as compared to parents of comparison children.

- Parents of Writing to Read children report greater progress in *writing* than parents of comparison students.
- More parents of Writing to Read students report evidence of reading and writing skills seen at home. In particular, the greatest difference observed is on writing words and stories: 15% more Writing to Read parents than comparison group parents report such behavior at home.

#### Chart 1. Writing Levels

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#### Level I: Rudimentary Writing

- · Writes own name
- Reproduces some words from recall

#### Level II: Early Understanding of Sounds and Spelling

- · Writes some new words phonetically
- · Produces conventionally accepted letters and groups of letters to represent sounds

#### Level III: Beginning Phrases and Sentences

- · Shows understanding of relationships between words in a group of words
- · Has a sense of the phrase or sentence as a complete unit of discourse

#### Level IV: Patterns and Sequence Expressions

- · Shows a rudimentary understanding of time and tense
- Shows an understanding of the relationships between phrases and/or sentences in a group of phrases and/or sentences
- Reproduces a simple story

#### Level V: Developed Writing

- · Presents a piece of writing with an opening and a conclusion
- · Employs a recognizable pattern of organization
- Introduces detail as appropriate

Chart 2. S	tudent Progress	Reporting	System
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Writing Level	November 1983	February 1984	May 1984
I	71.4	38.2	11.1
ii.	12.8	25.9	17.0
III	11.2	21.7	30.0
IV	4.4	9.8	27.4
V	0.2	4.5	14.6

## Chart 3. Percent of Students in Writing Levels III, IV, and V



Source: Student progress reports made by teachers

### Chart 4. Writing Ability Ratings

and the second second	Writing to Read	Non-Writing to Read
Kindergarten	4.50	3.10
Grade 1	6.60	4.90
Grade 1 after Writ- ing to Read	6.50	5.70



Population	Number of Writing to Read Schools	Effect of Writing to Read
A. Basic Populations		
54	6	Positive
55	I	Positive
56	2	Positive
60	4	Positive
62	1	Positive
B. Special Populations		
51	1	Positive
53	1	Equal
59	1	Equal
C. New Participants		1. I I I I I I I I I I I I I I I I I I I
63	2	Positive
64	5	Equal
65	4	Equal

### Chart 5. Writing Achievement

First Grade Populations with	Initial Reading Measures and P	ost Writing Measures
Population	Number of Writing to Read Schools	Effect of Writing to Read
<ul> <li>A. Basic Populations 52</li> <li>B. Special Populations (None in this analysis)</li> <li>C. New Participants</li> </ul>	I	Positive
63	2	Positive
65A	4	Positive
65B	4	Positive

Population	Number of Writing to Read Schools	Effect of Writing to Read
A. Basic Populations		
54	6	Positive
55	1	Positive
56	2	Positive
60	4	Positive
62	1	Positive
B. Special Populations		
51	1	Equal
53	1	Equal
59	1	Equal
C. New Participants		
63	2	Positive
64	5	Equal
65	4	Positive

#### Chart 6. Reading Achievement

First Grade Pop	ulations with Pre- and Post-Readin	g Measures
Population	Number of Writing to Read Schools	Effect of Writing to Read
A. Basic Populations 52	1	Equal
B. Special Populations 59	1	Equal
C. New Participants 63	2	Equal
65A	4	Equal
65B	4	Equal

	Ki	ndergarten		Fir	st Grade	
		Writing to Read	Non-Writing to Read		Writing to Read	Non-Writing to Read
	Word	N=575	N=503	Word	N=690	N=577
	Feet	12	14	Feet	82	84
	Ride	10	18	Ride	76	71
	Made	8	18	Could	35	30
	Was	17	24	Fun	91	87
	Cut	29	26	Good	91	90
	Fun	51	37	They	66	64
12	Big	50	40	Tree	83	79
ł2	Home	15	19	Anything	33	28
	Yes	58	55	Pretty	31	29
١.	Name	56	61	Together	46	38

Chart 7. Spelling: % Correct

#### Chart 8. Responses from Teacher Questionnaires

	Writing to Page	Non-Writing
	10 Леци	10 Redu
How do you feel about Writing to Read?		
Like it very much	34%	12
Like it	44%	
Not sure	10%	
Dislike it	11%	
Dislike it very much	2%	
How would you rate its overall effectiveness?		
Veru effective	28%	
Effective	54%	
Not sure	13%	
Inoffactive	60%	
Very Ineffective	0%	
of your students compares to the progress in READING of your students in previous years?		
Are reading better than students in previous		
classes	57%	44%
Are reading about the same as students in		
previous classes	36%	52%
Are not reading as well as students in		
previous classes	5%	1%
Have no opinion	2%	3%
How do you think the progress in WRITING of MOST		
of your students compares to the progress in		
WRITING of your students in previous years?		
Are writing better than students in previous		
classes	83%	31%
Are writing about the same as students in		
previous classes	13%	56%
Are not writing as well as students in		
previous classes	3%	6%
Have no opinion	2%	6%

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## Chart 8. Responses from Teacher Questionnaires (cont.)

	Writing to Read	Non-Writing to Read
How does the amount of time you spend on reading compare with the amount you spent in previous years?		
Am spending more time on reading than in previous years Am spending about the same amount of time	61%	33%
as in previous years Am spending less time on reading than in	37%	63%
previous years	4%	6%
How does the amount of time you spend on writing compare with the amount you spent in previous years? (Original rather than handwriting)		
Am spending more time on writing than in previous years Am spending about the same amount of time	88%	41%
as in previous years Am spending less time on writing than in	13%	53%
previous years	0%	6%
What kind of feedback have you had from parents about Writing to Read?		
Very positive	26%	
Positive	62%	**
Have had no feedback	9%	**
Very negative	3% 0%	
Activities at which "a typical child in your classroom spends a great deal of time."		and a state of the
Reading aloud	170%	30%
Reading silently	24%	21%
Creative writing	45%	12%
Developing a sight vocabulary	37%	42%
Learning word meanings	33%	38%
Phonic/structural analysis	59%	71%
Penmanship	29%	30%

#### Chart 9. Responses from Parent Questionnaires

		Writing to Read	Non-Writing to Read
How do you feel about Writing to Read?			
Like it very much		56%	
Like it		29%	**
Not sure		12%	**
Dislike it		2%	
Dislike it very much	(Less than)	1%	
How do you think your child feels about Writing to Read?			
Liber it was much		770.	
Likes it very much		100%	
Not sure		202	1010
Dislikes it		2%	
Dislikes it very much	(Less than)	1%	
children) Is doing better than my older children did Reads about the same as my older children did Is not doing as well as my older children did		58% 25% 12%	34% 38% 8%
Have no opinion		870	370
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doine better than my older children did		53%	33%
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doing better than my older children did Writes about the same as my older children did		53%	33% 44%
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doing better than my older children did Writes about the same as my older children did Is not doing as well as my older children did		53% 30% 9%	33% 44% 16%
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doing better than my older children did Writes about the same as my older children did Is not doing as well as my older children did Have no opinion		53% 30% 9% 8%	33% 44% 16% 7%
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doing better than my older children did Writes about the same as my older children did Is not doing as well as my older children did Have no opinion What evidence of your child's reading and writing skills have you seen at home?		53% 30% 9% 8%	33% 44% 16% 7%
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doing better than my older children did Writes about the same as my older children did Is not doing as well as my older children did Have no opinion What evidence of your child's reading and writing skills have you seen at home? Leaves notes around the house		53% 30% 9% 8%	33% 44% 16% 7%
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doing better than my older children did Writes about the same as my older children did Is not doing as well as my older children did Have no opinion What evidence of your child's reading and writing skills have you seen at home? Leaves notes around the house Reads signs, labels, books, other materials		53% 30% 9% 8% 48% 80%	33% 44% 16% 7% 41% 74%
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doing better than my older children did Writes about the same as my older children did Is not doing as well as my older children did Have no opinion What evidence of your child's reading and writing skills have you seen at home? Leaves notes around the house Reads signs, labels, books, other materials Wants to be read to		53% 30% 9% 8% 48% 80% 69%	33% 44% 16% 7% 41% 74% 69%
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doing better than my older children did Writes about the same as my older children did Is not doing as well as my older children did Have no opinion What evidence of your child's reading and writing skills have you seen at home? Leaves notes around the house Reads signs, labels, books, other materials Wants to be read to Wants to do his/her own reading		53% 30% 9% 8% 48% 80% 69% 67%	33% 44% 16% 7% 41% 74% 69% 62%
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doing better than my older children did Writes about the same as my older children did Is not doing as well as my older children did Have no opinion What evidence of your child's reading and writing skills have you seen at home? Leaves notes around the house Reads signs, labels, books, other materials Wants to be read to Wants to do his/her own reading Wants to read to other people		53% 30% 9% 8% 48% 80% 69% 67% 57%	33% 44% 16% 7% 41% 69% 62% 50%
Have no opinion How do you think your child's progress in WRITING compares to your other children's at this grade level? (Percentages of parents with older children) Is doing better than my older children did Writes about the same as my older children did Have no opinion What evidence of your child's reading and writing skills have you seen at home? Leaves notes around the house Reads signs, labels, books, other materials Wants to be read to Wants to do his/her own reading Wants to read to other people Writes words and storics		53% 30% 9% 8% 48% 80% 69% 67% 57% 67%	33% 44% 16% 7% 41% 69% 62% 50% 52%