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ABSTRACT

The Accelerated Schools Project is an approach to school change, designed to improve schooling for all children, in particular, for "at-risk" students. In 1997, four accelerated elementary schools associated with Florida A&M University identified reading achievement across all grade levels as their major challenge. Using the Accelerated Schools inquiry process, the school cadre at each respective school conducted an investigation to study the problem in depth. Several best practices reading programs were identified for adoption. The program that was selected for implementation with the first grade students was the "Read, Write & Type!" (RWT) computer software program, found to be an effective program to assist primary children in at-risk situations in acquiring beginning reading, writing, and spelling skills. Its emphasis is on activities that build phonological awareness, letter sound knowledge, and phonetic decoding in reading and spelling. It makes use of storylines and interesting and challenging activities that are appealing to children, and provides opportunity for extra practice on specific skills for children who may learn more slowly than others. First grade teachers and computer laboratory aides in the four experimental schools were trained in the implementation of the RWT project in the summer of 1998. The students went to the computing lab to work on the RWT program at least three times a week for 30 minutes each day. Results from pre- and posttests showed that the students in the RWT group and the control group made statistically significant gains in all three measures: Reading Words, Reading Nonwords, and Invented Spelling. Students in the experimental group, whose pretest scores indicated they were further behind in all three measures at the beginning, demonstrated significantly better gains. The RWT group outperformed the control group in the inventive spelling posttest. Findings suggest RWT can significantly improve the phonological awareness of students in at-risk situations. Fourteen tables and figures are included. (AEF)

The Effectiveness of the Read, Write & Type! Program in Increasing the Phonological Awareness of First Grade Students

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The Effectiveness of the Read, Write & Type! Program in Increasing the Phonological Awareness of First Grade Students

Dr. Mila Ignatz

Purpose: To determine the extent to which the software, Read, Write & Type!, can be utilized to increase phonological awareness in first grade students.

Rationale and Background:

This reading project is a product of the inquiry process into the low reading scores in four accelerated schools affiliated with Florida A&M University. The Accelerated Schools Project is described very briefly only to provide a context for the reading project.

The Accelerated Schools Project is a comprehensive approach to school change, designed to improve schooling for all children, in particular, students in “at-risk” situations so that they enter the educational mainstream by the end of the elementary school. It is a school-based systemic process of transforming the school culture and practice. It is an action philosophy that gets teachers, parents, and the school community working together toward a vision focused on student outcomes. The school goes through the process of taking stock, forging a vision, setting priorities, setting a governance structure and then use the inquiry process to address its major challenges.

In the governance structure, representatives of the school community organize into cadres that address a cluster of challenges. Most of our schools have organized themselves around major academic areas such as reading, writing, math and science, discipline, and parent involvement. The cadres meet two or three times a month and use the inquiry process to focus on the problems at the heart of their challenge areas. They make hypotheses why their challenge exists, test their hypotheses, identify those that hold water and based on these they brainstorm solutions. They research on best practices, seek out resource people with valuable information and interview experts in the area. Then they synthesize solutions, pilot experimental programs and evaluate those programs.

The steering committee meets once monthly to discuss and monitor the progress of the cadres, and provide input and feedback so that they are constantly moving in the direction of the school vision.

When a solution has been streamlined and ready to be implemented schoolwide it is presented to the School-as-a-Whole. Through consensus building the staff decides to implement the plan. Once implemented, the cadre evaluates the effectiveness of the strategies and programs

and continually refines its implementation until they are able to bring about desired results. This is how systemic changes are effected in accelerated schools.

In 1997 the four accelerated elementary schools that are associated with Florida A&M University identified reading achievement across all grade levels as their major challenge . Majority of the students were reading below grade level.

Using the Accelerated Schools inquiry process the school cadre at each respective schools conducted an investigation to study the problem in depth. Their findings included the following:

- (1) Students who can read can understand instructions better and learn content more easily.

Their learning experiences are more meaningful and relevant and these experiences stimulate further growth.

- (2) Reading comprehension depends on a number of variables including the children's ability to phonetically decode words in text, sight word fluency, a good vocabulary, adequate language experiences, good thinking skills and an interest in reading. However, research studies support that phonetic decoding is a critical step toward effective reading skills.

- (3) Phonetic awareness (ability to notice, think about, or manipulate, the individual sounds in words) is necessary in reading development through its effect on children's ability to phonetically decode words in text.

- (4) In a longitudinal study of first grade students with general verbal ability in the normal range, these same students in fifth grade demonstrated varying achievements. Students with weak phonological awareness ended up about two grade levels below their peers in sight word reading ability, and were more than three grade levels below their peers in phonetic reading skills.

- (5) The factors that cause individual differences among children in phonological awareness when they enter school are genetic endowment and preschool linguistic experiences.

- (6) There are research studies that show that it is possible to stimulate growth in phonological awareness by direct training. Training should involve systematic, direct, and explicit instruction in "phonics" as well as rich experiences with language and literature.

Several best practices reading programs were identified for adoption. The program that was selected for implementation with the first grade students was the Read, Write, and Type! computer software program which showed promise during the pilot testing. This program was developed by Dr. Jeannine Herron, of the California Neuropsychology Services and distributed by the Learning Company.

The Read, Write, and Type! Program has been found to be an effective program to assist primary children in at-risk situation in acquiring beginning reading, writing, and spelling skills. It

is extremely well constructed and builds on the current ideas about the type of instruction in reading that all children should have during the early elementary grades. Its emphasis is on activities that build phonological awareness, letter sound knowledge, and phonetic decoding in reading and spelling. It makes use of storylines and interesting and challenging activities that are appealing to children. It provides opportunity for extra practice on specific skills for children who may learn more slowly than others.

Program Field Testing

Three schools participated in the field test. Two second grade classes (one control and one experimental) from two schools volunteered for the field test. Thirteen students in a combination first/second grade ESE (Exceptional Student Education) class also participated in the field test.

Dr. Jeannine Herron provided the training for the teachers of the experimental classes and the ESE teacher. The field test took place from November, 1997 through May, 1998. Students were pretested and posttested using Forms A&B of Torgeson's Word Reading Efficiency and Nonword Reading Efficiency Measures. Students in the experimental classes performed significantly better than the two control classes on both measures. A comparison of the pretest and posttest scores of the ESE students also showed improvement that was statistically significant.

Encouraged by this data the four accelerated schools decided to implement the program at the first and second grade levels. The project was funded by the John S. and James L. Knight Foundation.

Data Source

The first grade students in four area schools: Bond Elementary School, Havana Elementary School, St. John Elementary School, and Stewart St. Elementary School participated in the project during the 1998-1999 school years. All schools except Stewart St participated in 1999-2000. Bond Elementary School is in the Leon School District and the other schools are in the Gadsden School District. There were four classes at Bond, six at Havana, three at St. John and five at Stewart St.

Three first grade classes in Leonard Wesson Elementary (Leon) and two first grade schools in George Munroe Elementary (Gadsden) served as control during the 1998-1999 school year.

Achievement scores of students in the four accelerated schools were usually behind those of other schools in their respective districts. Finding appropriate control groups was difficult. Schools that closely approximated the school populations were selected.

All schools in the experimental and control groups are Title I schools. Minority enrollment was 92 - 98% of the student population. 88-90% of the students were on free and reduced lunch

Method

First grade teachers and computer laboratory aides in the four experimental schools were trained in the implementation of the Read, Write & Type! project in the summer of 1998. All first grade students in the experimental and control schools were pretested using Forms A&B of Torgeson's Word Reading Efficiency and Nonword Reading Efficiency Measures. These measures were administered on a one-on-one basis by a graduate student in September and October of the 1998 - 99 school year. They were also pretested using Tangel and Blackman's Phonemic Awareness and Invented Spelling Test. This test was administered by the classroom teachers.

The reliability of the Word Reading Efficiency Test Form A is .97 and of Form B is .96. The reliability of the Nonword Reading Efficiency Test Forms A and B is .90. The reliability of both tests is .95. The reliability of Tangel and Blackman's Phonemic Awareness and Invented Spelling Test using the Pearson correlation was .98.

The first grade students went to the computing lab to work on the Read, Write, & Type! program at least three times a week for 30 minutes each day. The teachers and the computing laboratory aides monitored the progress of the students using evaluation measures. They made sure the students used proper fingering on the keyboard and sounded off the letters while typing them. They encouraged the students to take reinforcement and enrichment options provided by the software such as the email tower, story tree, etc.

The students were posttested in May, 1999 and the results were tabulated and analyzed.

At the beginning of the second year of implementation, new teachers and computer laboratory aides received additional training. The first grade students were pretested using the same measures. The program was implemented as in the first year in all accelerated schools with the exception of Stewart St. Elementary because the school decided to implement the program at the kindergarten level. The students were posttested in May, 2000 and the data was analyzed. Control schools were not used during the second year.

Only the students that had pretest and posttest scores were included in the data analysis.

Results and Conclusions

Year One

Analysis of variance showed that first grade students in the RWT group and the control group made statistically significant gains in all three measures: Reading Words, Reading Nonwords and Invented Spelling. Pretest scores of students in the experimental group indicated that they were further behind in all three measures at the beginning of the study. Nonetheless they

were observed to demonstrate significantly bigger gains. The RWT group outperformed the control group in the inventive spelling posttest.

Table 1. 1998-1999 Means on Evaluation Measures

	Word Reading Pretest	Word Reading Posttest	Diff	Nonword Reading Pretest	Nonword Reading Posttest	Diff	Inventive Spelling Pretest	Inventive Spelling Posttest	Diff
RWT group	6.82	16.99	10.17	4.03	8.75	4.72	18.55	33.68	15.13
Control group	10.45	17.81	7.35	7.41	8.57	1.16	27.47	31.16	3.69

Table 2. ANOVA for Word Reading Efficiency Test

Source of variation	SS	df	MS	F
A (Treatment)	461.38	1	461.38	7.11 **
B (Pretest/Posttest)	7145.80	1	7145.80	110.19 **
AB	183.25	1	183.25	2.83
Within cell	31126.19	480	64.85	

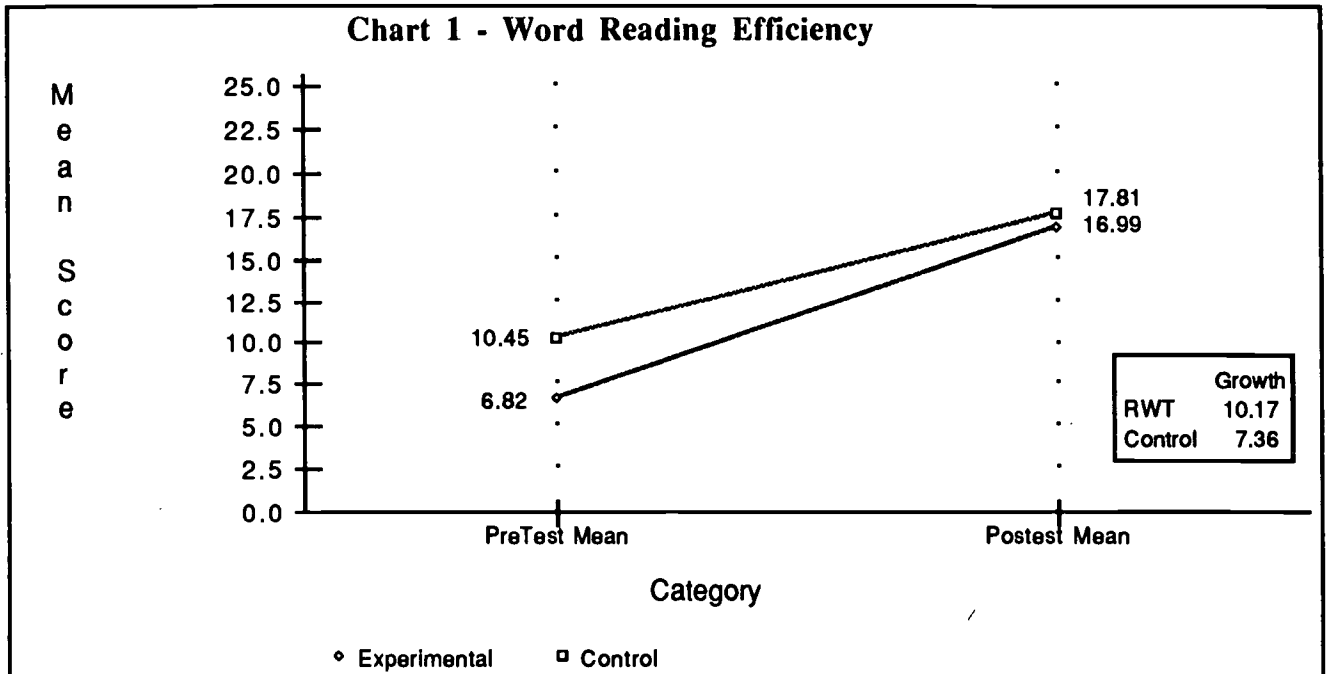
Table 3. ANOVA for Nonword Reading Efficiency Test

Source of variation	SS	df	MS	F
A (Treatment)	237.03	1	237.03	7.36 **
B (Pretest/Posttest)	799.98	1	799.98	24.84 **
AB	293.51	1	293.51	9.11 **
Within cell	15518.22	482	32.20	

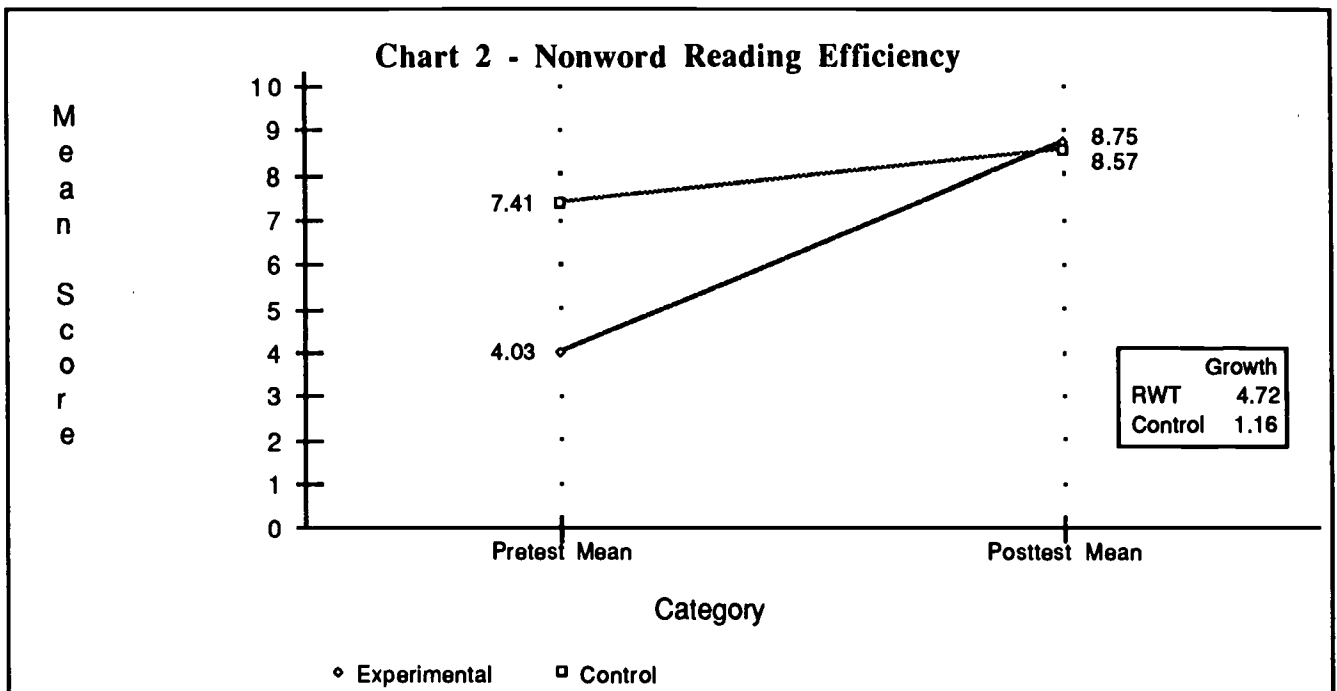
Table 4. ANOVA for Inventive Spelling Test

Source of variation	SS	df	MS	F
A (Treatment)	1125.27	1	1125.27	5.11 *
B (Pretest/Posttest)	9730.76	1	9730.76	44.23 **
AB	3594.50	1	3594.50	16.34 **
Within cell	134203.44	610	220	

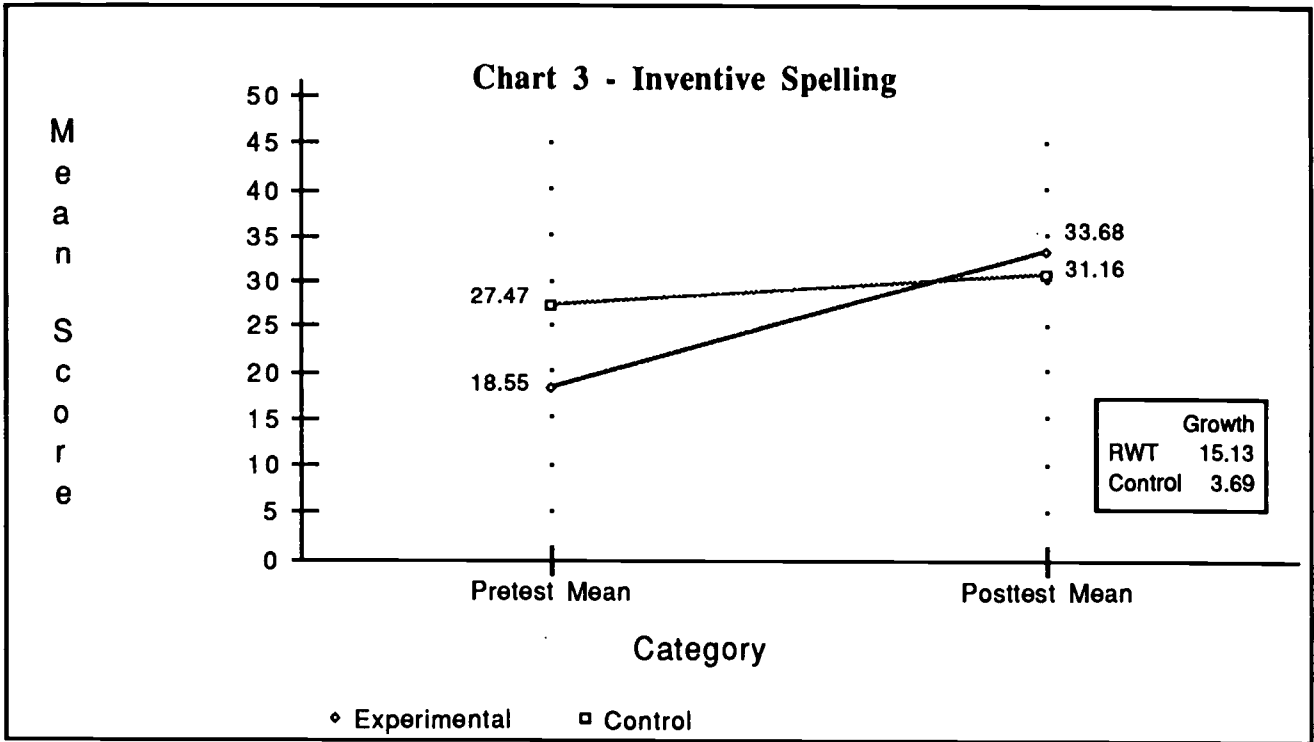
** Significant at the .01 level.



Analysis of Variance showed that the RWT students performed significantly better than the control group on the Word Reading measure ($F = 7.11$ ($p < .01$)) although both groups demonstrated significant growth during the school year ($F = 110.19$ ($p < .01$)).



Analysis of Variance showed that the RWT group performed significantly better than the control group on the Nonword Reading measure ($F = 7.36$ ($p < .01$)). The growth for the RWT and the control groups during the school year was also significant ($F = 24.84$ ($p < .01$)).



Analysis of Variance indicated that the RWT group performed significantly better on the Inventive Spelling measure ($F = 5.11$ ($p < .05$)). The growth of both RWT and control groups were also significant ($F = 44.23$ ($p < .01$)).

Year Two

The 1999-2000 data of the three participating schools were compared with the 1998-1999 data from the same schools on the respective measures. Analysis of variance was performed on the data for each measure.

Table 5. 1998-1999 and 1999-2000 RWT Means on Evaluation Measures (Three schools only)

	Word Reading Pretest	Word Reading Posttest	Diff	Nonword Reading Pretest	Nonword Reading Posttest	Diff	Inventive Spelling Pretest	Inventive Spelling Posttest	Diff
1998-1999	7.80	18.76	10.96	4.70	9.42	4.72	18.46	34.80	16.34
1999-2000	9.65	24.54	14.89	6.36	11.08	4.72	25.11	39.14	14.03

Table 6. ANOVA for Word Reading Efficiency Test

Source of variation	SS	df	MS	F
A (Treatment)	2329.60	1	2329.60	19.85 **
B (Pretest/Posttest)	26729.60	1	26729.60	41.38 **
AB	604.45	1	604.45	5.15 *
Within cell	75825.87	646	117.38	

Table 7. ANOVA for Nonword Reading Efficiency Test

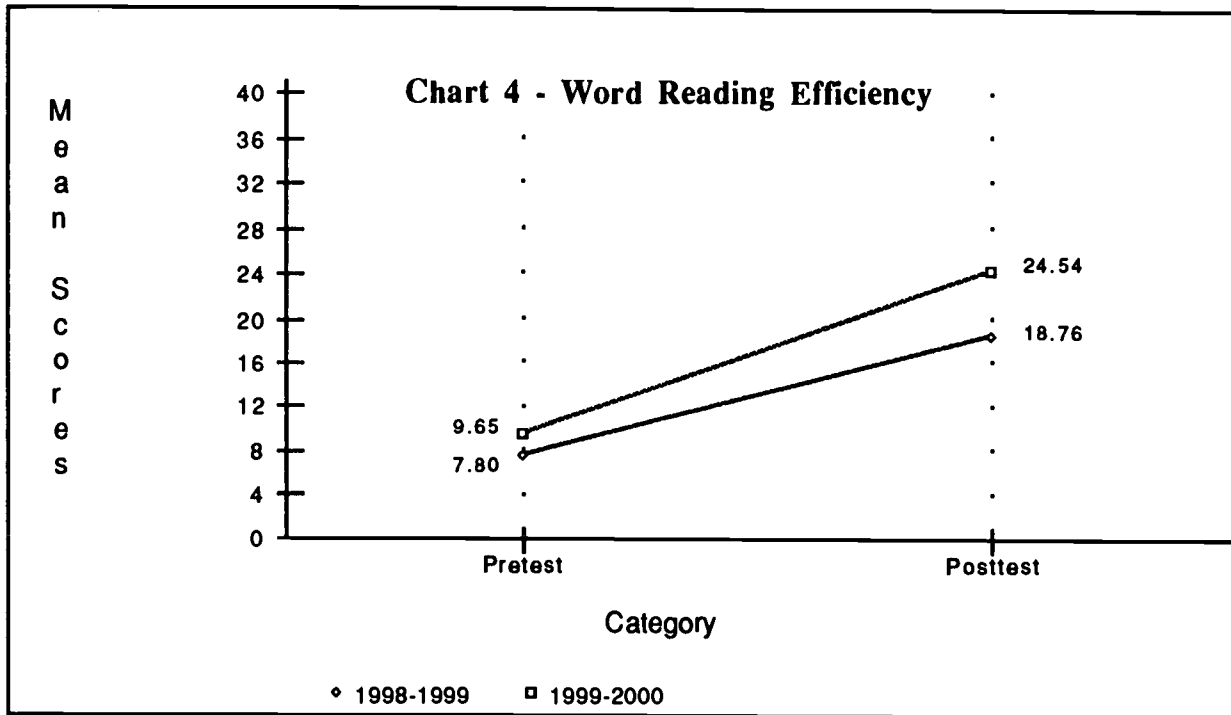
Source of variation	SS	df	MS	F
A (Treatment)	440.00	1	440.00	11.00 **
B (Pretest/Posttest)	3564.80	1	3564.80	89.12 **
AB	16	1	16	0.04
Within cell	25920.59	648	40	

Table 8. ANOVA for Inventive Spelling Test

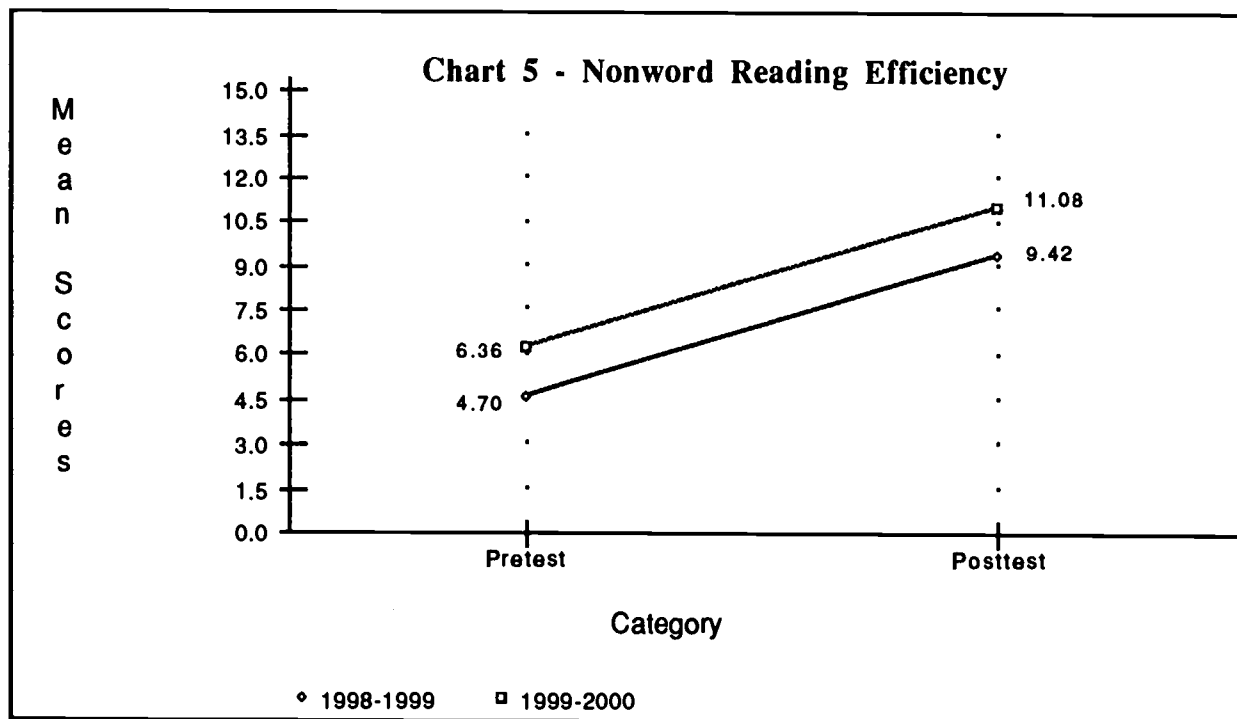
Source of variation	SS	df	MS	F
A (Treatment)	5125.50	1	5125.50	4.04 *
B (Pretest/Posttest)	39225.80	1	39225.80	30.87 **
AB	220.70	1	222.70	1.85
Within cell	853445	672	1270	

** Significant at the .01 level

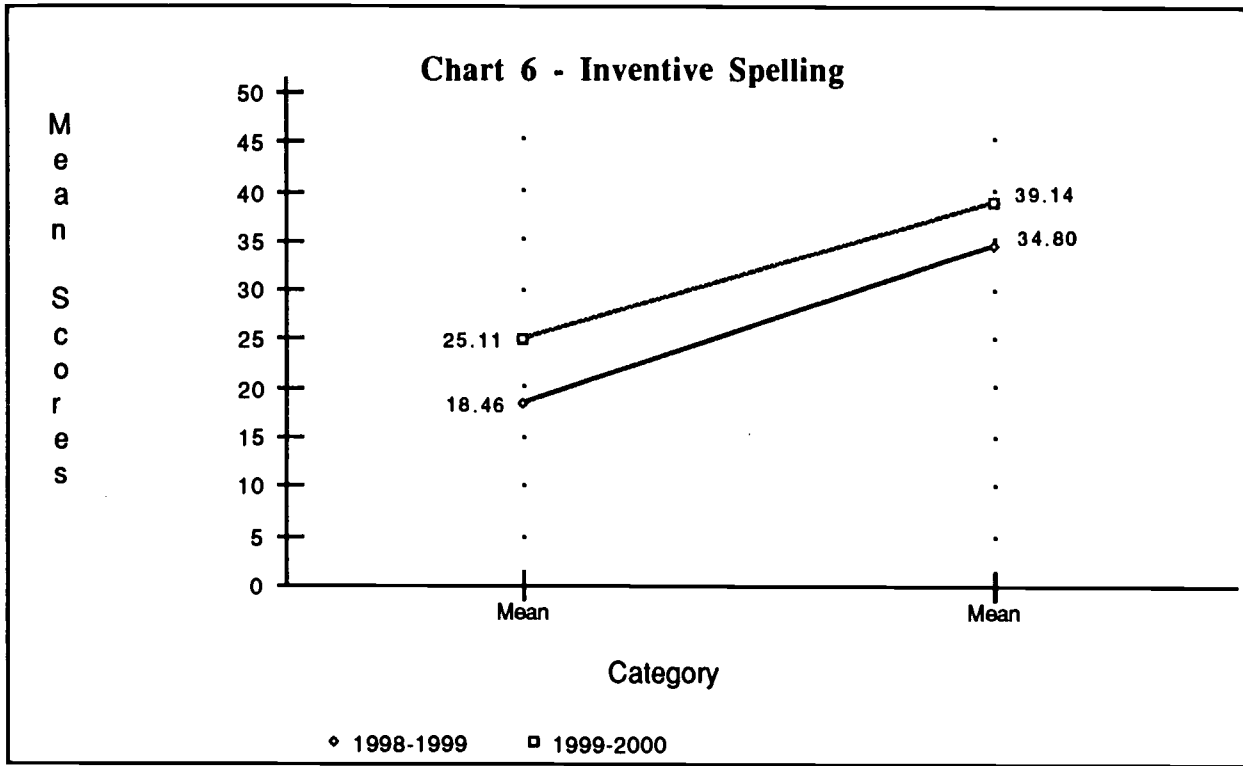
* Significant at the .05 level



The first grade RWT students in 1999-2000 performed significantly better in reading words than the first grade RWT students in 1998-99 {F = 19.85 (p<.01)}.



The first grade RWT students in 1999-2000 performed significantly better in reading nonwords than the first grade RWT students in 1998-99 {F = 11.00 (p<.01)}.



The first grade RWT students in 1999-2000 performed significantly better in inventive spelling than the first grade RWT students in 1998-99 ($F = 4.04$ ($p < .05$)).

In all three measures the increase in the achievement of the students during the second year was also statistically significant. 1999-2000 scores were better than those of the first grade students during the previous year. This could be attributed to the fact that teachers have become more proficient in implementing the Read, Write & Type! Program. The first grade students were introduced to the RWT! Program in 1998-1999 while in kindergarten which could explain the higher 1999-2000 pretest scores. Additionally, two of the schools have started implementing the SRA Reading Program in 1999-2000 which could have contributed to the increase.

Limitations

Some of the teachers who were trained in PALS (Peer-Assisted Learning Strategy), another reading program, used this teaching strategy in their classrooms. Two of the schools have also adopted the SRA Reading Program. In light of these two factors it is not possible to determine precisely to what extent RWT! contributed to the improved scores.

Greater achievement was observed in classrooms where teachers enriched their reading programs with language experiences and literature. This difference in teaching strategy was not factored into the design.

The schools in the experimental group were not randomly selected. They are schools that have elected to implement the Accelerated Schools Process in addressing their challenges. They are the schools that were originally among the lowest performing in their respective districts. For this reason it was difficult identifying control schools for comparison purposes. As seen in the pretest scores, the control schools performed better in all of the measures. Nonetheless, schools that closely resembled the experimental schools in terms of socioeconomic income, percentage of free and reduced lunch, proximity of neighborhoods, and achievement scores were selected.

The Word and NonWord tests had to be administered individually. It took two months to pretest a total of 242 students in the fall of 1998 and posttest them before the end of the school year. The control students were interviewed after the RWT students. This could contribute partially to the higher pretest scores from the control group.

Implications

Read, Write & Type! can significantly improve the phonological awareness of students in at-risk situations. The program is a high interest program that can help children acquire beginning reading, writing, and spelling skills. This recommendation is based on the following observations. RWT! is well constructed and builds on the current ideas about the type of instruction in reading that all children should have during the early elementary grades. It makes use of storylines as well as interesting and challenging activities that are appealing to children so much so that students were

observed not to mind going over levels that they did not complete successfully. It provides opportunities for extra practice on specific skills for children who may learn more slowly than others. In the implementation of a successful reading program, RWT! should be supplemented with literature and rich language experiences.

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