
The Use of Sing, Spell, Read & Write® as Intervention Curriculum

Analysis of a Four-Week Summer School Pilot Program in Ten Elementary Schools in the San Francisco Unified School District



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Introduction

Background of the Sing, Spell, Read & Write® (SSRW) Curriculum

Sue Dickson¹, veteran educator and the author of Sing, Spell, Read & Write®, designed an integrated program for teaching spoken language, reading, spelling, and writing. The curriculum is a program of carefully sequenced, systematic, explicit phonics instruction to build fluent, independent readers. Implementation of the curriculum employs the use of music and movement with multimodal teaching strategies. Using *look, listen, point, sing-along*, and *echo routines*, along with *gross motor* and *fine motor* activities, the program actively engages the senses and is designed to be effective for all types of preferred learning styles. The multimodal teaching strategies employed are strongly supported by current research on brain function, language acquisition, and reading.^{2,3,4,5}

The Sing, Spell, Read & Write® (SSRW) program also utilizes seven principles identified by Diane McGuinness⁶ as major components of an *effective* beginning reading program. These components are:

- **Phonemic awareness.** Training in awareness of phonemes in speech and the ability to segment and blend isolated phonemes in words.

¹ Dickson, S. (1984) *Sing, Spell, Read & Write*. Chesapeake, VA: Sue Dickson, Publisher.

² Adams, M.J. (1990) *Beginning to Read: Thinking and Learning about Print*. Cambridge, MA: MIT Press.

³ Hiebert E.H., & Raphael, T.E. (1996) Psychological perspectives on literacy and extensions to educational practice. In D.C. Berliner & R.C. Calfee (Eds.) *Handbook of Educational Psychology*. New York: Macmillan.

⁴ National Academy of Sciences (1998) *Preventing Reading Difficulties in Young Children*. Washington, D.C.

⁵ Meisels, S. J. & Shonkoff, J. P. (Eds.) (1990) *Handbook of Early Childhood Intervention*. New York: Cambridge University Press.

⁶ McGuinness, D. (1997) *Why Our Children Can't Read and What We Can Do About It*. New York: Free Press.

- **Alphabetic principle.** Teaching the alphabetic code the way it was written, from sound to print.
- **Sound-to-symbol association.** Teaching how to connect phonemes in words to individual letters and letter combinations.
- **Logic.** Instructing in a sequenced, logical order, from simple to complex, that conforms to the child's developmental level. It should include the entire spelling code, not just a fraction of it.
- **Curriculum.** Materials should cover all possible skill areas: phoneme analysis, segmenting, blending, reading, writing, spelling. Materials must be related in content. Reading and spelling are reversible.
- **Pedagogic style.** Teaching by exposure and example, using brief, clear explanations. Engaging the child in active problem-solving.
- **Fail-safe assessment.** Monitoring the child's model of the reading process and his or her performance at frequent intervals.

Curriculum for Kindergarten

The SSRW kindergarten curriculum includes two audio cassettes and a CD; visual aids include an *Express Chart* and *Trains, A-Z Phonics Song Wall Cards; Manuscript Wall Charts; Short Vowel Song Cards; Ferris Wheel Chart, five Short Vowel Word Charts, All Aboard and On Track curriculum books; six Phonetic Storybook Readers; two games: A-Z Sound-O and A-Z Pick-A-Sound* ; manuscript desk stick-ons with markers and erasers; and finally, for reinforcing efforts and success, a *Treasure Chest* with prizes.

Kindergarten Teacher's Manual

A comprehensive teacher's manual provides teaching strategies for engaging students in a multisensory learning experience with step-by-step support through scripted lessons for implementing the curriculum. To promote consistency in methodology, it offers pacing guidelines, reproducibles, a sample letter to send home to parents, and musical scores. The manual also details correlated language arts lessons that include phonemic awareness, intensive systematic phonics, comprehension, guided reading, and beginning manuscript. Additionally, the teacher's manual suggests related activities involving cooking, finger plays, poetry, songs, games, art, manipulatives, and recommends appropriate read-aloud literature.

Curriculum for Level 1

The Level 1 curriculum for SSRW is visually oriented with a highly colorful *Language Arts Raceway Wall Chart* with individual racecars that let students advance at their own pace through skill mastery to the finish line. The multisensory curriculum combines sing-along-and-point songs and wall charts, hands-on activities and games, two interactive consumable texts, an Assessment Book, and 17 delightful storybooks containing 48 child-centered, decodable stories.

The first of the student books, *Off We Go*, provides a review of kindergarten reading readiness skills. The second student book, *Raceway*, provides a complete language arts curriculum which coordinates intensive systematic phonics, vocabulary development, guided reading and comprehension, spelling, and grammar.

Throughout each student book, lessons use sing-along phonics songs, interactive point-and-learn charts, and motivating practice to move readers to the next skill level. Each book also has a laminated back cover for practicing writing skills using a dry erase marker and eraser. A

manuscript desk stick-on serves as a convenient writing/phonics model, nametag, and number line.

The seventeen connected storybooks contain stories, poems, and rhyming tales, all child-centered and illustrated with bright colors. The storybooks are designed to be 99% decodable with a 100% potential for accuracy. They are hand-sized with running text of 25,555 words and 1,000 pages of storyline.

Level 1 Teacher's Manual

The 736-page teacher's manual provides methodology instructions for consistency in implementing the curriculum. The manual includes scripted instructions for every language arts lesson, including phonemic awareness, intensive systematic phonics, guided reading and comprehension, authentic and process writing, and grammar chalkboard lessons. It also provides lesson objectives, material lists, suggestions for pacing, and reproducibles. The manual lists auxiliary read-alouds that reinforce the skills addressed in each lesson. A video featuring *Sing, Spell, Read & Write*® author Sue Dickson offers teaching techniques and suggestions for all 36 steps in the Level I program. Additionally, the Level I program includes an Assessment Book with 17 book end assessments and 3 achievement tests to assist in monitoring student progress and adjusting instruction as needed.

Intervention Pilot Program

Four-Week Summer School Implementation Methods

The typical implementation of the SSRW curriculum is either as a supplement to or as the primary language arts program in kindergarten through third grade. However, the purpose of this pilot study was to examine the use of SSRW as an intervention curriculum. This report presents

the analysis of SSRW in a four-week summer school program conducted during the 2000 academic year. The summer school program encompassed ten schools, involving 51 kindergarten, first, and second grade elementary teachers and 790 students in the San Francisco Unified School District. The San Francisco Unified School District is comprised of a total of 121 elementary schools with 61,300 students. The ethnic characteristics of the District are: Asian 49%; Hispanic 21%; African-American 16%; Caucasian 13%; and Native American 1%. The average School District expenditure per student annually is \$91, categorized in the low range among school expenditure rankings.

Sing, Spell, Read and Write® was the primary curriculum of the summer pilot program.

The pilot program was four weeks in duration, with sessions five days a week for four hours a day, providing a total of 80 hours of instruction as the maximum number of hours possible for student participants during the period.

In-service Training of Elementary Teachers

Prior to the summer pilot program, an eight-hour in-service for teachers was conducted.

The in-service was designed to train teachers in the use of the program and to answer any questions that they had. Each teacher was given the appropriate manual, either kindergarten or first grade, with key parts pre-tabbed for ease of implementation of the intervention. The trainers leading the in-service provided a mock classroom, showing the setup for the materials, and used student-teacher role-playing techniques to enhance the experience. Each of the program techniques was demonstrated, with any questions regarding implementation addressed.

Teachers were provided with a daily schedule for the 80-hour pilot program as well as a checklist of components. Videos demonstrating each one of the program techniques were shown

as the materials were presented. Teachers were coached post-video by individual trainers and given the opportunity to practice.

Assistance was provided for all the pretesting once the pilot program began and again for the posttesting process. All of these techniques enhanced the pedagogic consistency across school sites during the pilot program.

Additionally, consultants visited the pilot classrooms during the four-week summer sessions and, when needed, modeled key techniques for the teachers. This was particularly necessary since many of the summer school teachers had not taught a systematic phonics program before.

Methodology

Research Design

A research design utilizing student t-Testing of pretest and posttests designed for curriculum skill areas for the kindergarten, first grade, and second grade participants was chosen. Although a counterfactual design involving treatment and control group school sites, matched for various site and participant characteristics, may generally be used to isolate effects of curriculum intervention during a nine-month academic year, it was not necessary for the purposes of this study. The factors favoring the use of t-Testing were: (a) pretest scores served as controls for posttest scores; (b) the *Sing, Spell, Read & Write*® program was the only curriculum used for the summer school intervention program; (c) there was a lack of involvement in other curriculum and/or other instructional activities by participants during the period; and (d) any potential gains

made by students due to maturation or developmental processes during a four-week period were projected to be negligible for the purposes of this pilot study.

Evaluation Questions

Specific evaluation questions were developed to guide the analysis of the San Francisco Unified District Summer School Program. These questions are:

- What are the achievement outcomes overall for the kindergarten and first grade student participants across school sites?
- What are the achievement outcomes overall for the second grade student participants across school sites?
- Was the SSRW curriculum effective for the kindergarten and first grade student participants designated as having *“limited English proficiency”* across school sites?
- Was the SSRW curriculum effective for the kindergarten and first grade student participants designated as having *“non-English proficiency”* across program sites?
- Did the use of the SSRW program as curriculum intervention produce educationally significant results overall for students with normal English language proficiency?
- Were any educationally significant effects for particular skill sets produced by the SSRW curriculum among particular student sub-group populations?

Pilot Program School Sites

A total of ten elementary schools in the San Francisco Unified School District implemented the *Sing, Spell, Read and Write*® curriculum for a four-week period in academic year 2000 as a pilot program for the summer school session.

San Francisco Unified District elementary schools involved in the study were: *Bryant, Carver, Chavez, Cleveland, Golden Gate, Gordon Lau, Monroe, E. R. Taylor, Visitation Valley, and Webster*. A total of fifty-one kindergarten, first grade and second grade elementary teachers implemented the program involving 790 students.

Data Analysis

- Rowlette Research Associates, Inc. received the raw data collected at participating schools. Raw data pretest and posttest scores for various curriculum areas⁷ were compiled, along with the following information:
 - Student identification number
 - Name of the school
 - Name of the teacher
 - Grade level
 - Language proficiency assessment level: English proficient; Limited English proficient; Fluent English; Non-English proficient, and no designation⁸.

The data were entered into a database and verified for accuracy. Data were analyzed using SPSS® statistical analysis software. The database was stratified using both grade level and language proficiency level assessment as identified in the raw data. Student t-Testing by grade level and by language proficiency level was used to determine the variance between pretest and posttest means and level of significance for each database subset of

students. Effect sizes were calculated and a Binomial Effect Size Differential (BESD) provided in tables for each student category findings.

Population

The kindergarten and first grade sample population is provided in **Table 1** below:

Table 1

Student Classification	n
Total Kindergarten and First Grade⁹	540
Kindergarten	258
First Grade	282
Non-English Proficiency	128
Limited English Proficiency	169
English Proficiency	121
Fluent English Proficiency	23
No Language Proficiency Identified	99

The second grade sample population is provided in **Table 2**:

Table 2

Student Classification	n
Total Second Grade	250
Limited English Proficiency	103
English Proficiency	28
No Language Proficiency Identified	119

Findings

Kindergarten/First Grade Participants

We were interested in examining our first evaluation question for the analysis of the data:

What are the achievement outcomes overall for the kindergarten/first grade student participants across school sites? The data were clear that the curriculum produced an educationally

⁷ A copy of the pretests and post tests used are provided in Appendix B.
⁸ Some students had no language proficiency level designated.
⁹ A pooled kindergarten and first grade sample was used to increase statistical power for subset analyses because both grades were given the same pretest/posttests.

significant effect ¹⁰¹¹ of .33 on the overall skill level of the kindergarten/grade 1 student participants. The sample size is almost twice that necessary for statistical power $p < .05$, as can be seen in **Table 3**.

Table 3
Kindergarten/First Grade Sample

	540 Total K+1 Sample All language Proficiencies			
	n	Mean	SD	SE
Overall Pretest	540	71.5	35.6	1.53
Overall Post test	540	94.3	34.3	1.47
Difference	540	-22.8	20.0	0.86
Difference between means	-22.8			
95% CI	-24.5 to -21.1	Effect=0.33		
t statistic	-26.52			
2-tailed p	<0.0001			

The effect achieved for the kindergarten-extracted sample was even greater at 0.44, while the first grade sample remained the same, as presented in **Tables 4** and **5**.

Table 4
Kindergarten Sample

	258K Sample			
	n	Mean	SD	SE
Total pretest	258	52.1	26.9	1.67
Total posttest	258	78.2	33.9	2.11
Difference	258	-26.1	21.2	1.32
Difference between means	-26.1			
95% CI	-28.7 to -23.5	Effect=0.43		
t statistic	-19.77			
2-tailed p	<0.0001			

¹⁰ "Effect size is defined technically as the proportion of variance accounted for by the treatment measured in standard deviation units. The seminal work in this field has been done by Cohen (1977, 1988) who developed categories for effect sizes for social science research." Hedrick, T.E., Blackman, L., and Rog, D. J. (1993) *Applied Research Design: A Practical Guide*, P. 75. Sage Publications, Newbury Park, London, New Dehli.

¹¹ "In general, an effect size of +0.25 or more is considered to be educationally significant. To give a sense of scale, an effect size of +1.00 would be equivalent to an increase of 100 points on the Scholastic Aptitude Test (SAT) scale or 15 points of IQ—enough to move a student from the 20th percentile (the normal level of performance for children in poverty) to above the 50th percentile (the norm for mainstream students)." (Fashola, O.S. and Slavin, R. E. (1996) *Effective and Replicable Programs for Students Placed at Risk in Elementary and Middle Schools*. Washington, D.C.: Office of Educational Research and Improvement, U.S. Department of Education.)

Table 5
First Grade Sample

	282 First Grade Sample			
	n	Mean	SD	SE
Total pretest	282	89.2	33.3	1.98
Total posttest	282	109.0	27.2	1.62
Difference	282	-19.8	18.3	1.09
Difference between means	-19.8			
95% CI	-21.9 to -17.6	Effect=0.33		
t statistic	-18.14			
2-tailed p	<0.0001			

Second Grade Student Participants

We looked at our next evaluation question: *What are the achievement outcomes overall for the second grade student participants across school sites?* As can be seen in Table 4 below, an educationally significant effect of .44 was achieved in overall skills from pretest to posttest using the SSRW curriculum. The sample size is almost 100 more than necessary to provide statistical power for significance at $p < .05$ as can be observed in **Table 6**.

Table 6
Second Grade
Overall Skills

	250 All language proficiencies			
	n	Mean	SD	SE
Total Pretest	250	47.241	6.615	0.4094
Total Post Test	250	52.034	4.442	0.2750
Difference	250	-4.793	5.690	0.3522
Difference between means	-4.793			
95% CI	-5.487 to -4.100	Effect=0.44		
t statistic	-13.61			
2-tailed p	<0.0001			

These findings from the analysis of the research data are best understood by a brief

explanation of the Binomial Effect Size Differential and the conversion of the effect sizes to BESD equivalents. The most striking feature of the BESD representations of the effect size is the different impression it gives of the potential *practical significance* of a given effect from that of the standard deviation unit expression.

For example, an effect size of one-fifth of a standard deviation (.20) corresponds to a BESD success rate differential of .10, that is, 10 percentage points between pretest and posttest success rates (e.g., 55% versus 45%). A success increase of 10 percentage points on a pretest group baseline of 45% represents a 22% improvement in the success rate (10/45). Viewed in these terms, the same intervention effect that might appear minimal in standard deviation units—for our discussion example purpose, a .20—now looks potentially meaningful.

Looking at the BESD for the overall outcomes for kindergarten, first grade, and second grade populations in this summer school pilot study, we find the following intervention impact demonstrated in **Table 7**.

Table 7
Kindergarten/First Grade and Second Grade
Binomial Effects Size Differential

Samples	%Above Mean Pre-test	%Above Mean Post test	Gain Differential %
Kindergarten/First Grade Overall	42%	57%	15%
Second Grade Overall	40%	60%	20%

The results of a BESD differential of 15%¹² from a baseline of 42% is that it represents a

¹²The 0.33 effect achieved for the Kindergarten/1st Grade participants and the effect of 0.44 for the Second Grade participants are both actually between two scale points on the BESD which is graduated on a scale using tenths: 0.3, 0.4, etc. Therefore these BESD equivalent differentials are underestimates (See *Handbook of Applied Social Research Methods*, Bllickman, L. and Rog, D. J. , (Eds), (1998), p. 63. Sage Publications, Newbury, London, New Delhi.

36% gain overall (15/42) for the kindergarten/first grade participants in the summer school program during a four-week period. The BESD differential gain for the second grade participants is even more marked with a 20% increase from a baseline of 40%, representing a 50% gain (20/40).

These results demonstrate the importance of more fully understanding evaluation data by utilizing a Binomial Effect Size Differential, previously presented in standard deviation units.

Limited English Proficiency Participants

Our next evaluation questions results are presented in **Tables 8 and 9**: *Was the SSRW curriculum effective for the K-1 and second grade student participants designated as having “limited English proficiency” across school sites?*

Table 8
Kindergarten/First Grade Overall Skills
Limited English Students

	169 Limited English K + 1 Grade			
	n	Mean	SD	SE
Total Pretest	169	84.3	35.0	2.69
Total Post Test	169	105.2	31.0	2.39
Difference	169	-20.8	19.0	1.46
Difference between means	-20.8			
95% CI	-23.7 to -17.9		Effect=0.32	
t statistic	-14.23			
2-tailed p	<0.0001			

Table 9
Second Grade Overall Skills
Limited English Students

	103 Limited English Second Grade			
	n	Mean	SD	SE
Total Pre Test	103	46.816	6.924	0.6822
Total Post Test	103	53.350	2.906	0.2863
Difference	103	-6.534	6.406	0.6312
Difference between means	-6.534			
95% CI	-7.786 to -5.282		Effect=1.71	
+t statistic	-10.35			
2-tailed p	<0.0001			

As can be determined from Tables 8 and 9 above, kindergarten/first grade participants with limited English proficiency achieved an educationally significant effect from pretest to posttest of one-third of a standard deviation in four weeks.

However, the results were highly dramatic for the second grade participants with limited English proficiency. From pretest to posttest, *their scores changed almost 2 standard deviations during the four-week period.* The changes in terms of BESD equivalents are presented in **Table 10.**

Table 10
Kindergarten/First Grade and Second Grade Limited English Participants
Binomial Effects Size Differential

Samples	%Above Mean	%Above Mean	Gain Differential %
	Pre-test	Post test	
K/1 Overall	42%	57%	15%
Second Grade Overall	17%	82%	65%

The results of a BESD differential of 15%¹³ from a baseline of 42% is that it represents a 36% gain overall (15/42) for the kindergarten/first grade participants with *limited English proficiency*. The BESD differential gain for the second grade participants with *limited English proficiency* represents a 382% gain (65/17).

Non-English Proficiency Participants

Next, we examined the pretest and posttest results for the kindergarten/first grade students designated as *non-English* proficient. There were no second grade participants with this designation to include in the analysis. The scores for this subset group are presented in **Table 11** below.

Table 11
Kindergarten/First Grade Non-English Proficiency

	n	128 Non-English proficiency level		
		n	Mean	SD
Total Pretest	128	47.9	23.5	2.08
Total Post test	128	78.3	32.8	2.90
Difference	128	-30.4	22.5	1.99
Difference between means	-30.4			
95% CI	-34.3 to -26.5	Effect=0.54		
t statistic	-15.28			
2-tailed p	<0.0001			

The sample size for this population subset exceeded the number required for the effect size to be significant at $p < .05$.

The BESD equivalent is presented below in **Table 12**.

¹³The 0.33 effect achieved for the Kindergarten/1st Grade participants and the effect of 0.44 for the Second Grade participants are both actually between two scale points on the BESD which is graduated on a scale using tenths: 0.3, 0.4, etc. Therefore these BESD equivalent differentials are underestimates (See **Handbook of Applied Social Research Methods**, Blickman, L. and Rog, D. J., (Eds), (1998), p. 63. Sage Publications, Newbury, London, New Delhi.

Table 12
Kindergarten/First Grade Non-English Proficiency Participants
Binomial Effect Size Differential

Samples	%Above Mean Pre-test	%Above Mean Post test	Gain Differential %
K/1	38%	62%	24%

The result of a BESD differential of 24% from a baseline of 38% represents a 63% *gain* (24/38) for the kindergarten/first grade participants with *non-English proficiency*.

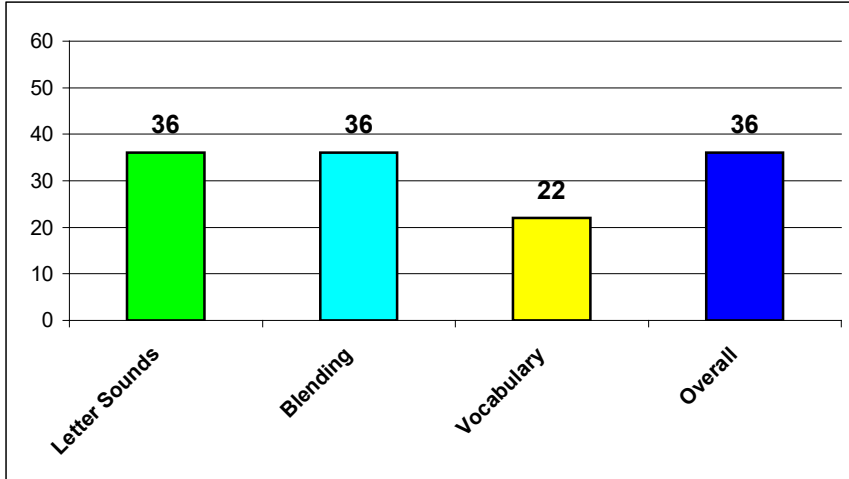
Having observed that the SSRW program did produce dramatic significant results for student populations designated as having limited or non-English language proficiencies, we wanted to turn to our next evaluation question: *Did the use of the SSRW program as curriculum intervention in a four-week program produce educationally significant results for students with proficient or fluent English language skills?* Although the sample sizes were too small in these participant subsets for definitive conclusions¹⁴, the results trend in the same direction as the other student participants overall and in the student subsets: the pre- to post-test effect for the *fluent-English K/1 participants* is 0.31; the pre- to post-test effect for the *English-proficient kindergarten/first grade participants* is 0.35; and, the pre- to post-test effect for the *English proficient second grade participants* is 0.43.

Finally, we were interested in reviewing our last evaluation question: *Are there any educationally significant effects for particular skill sets produced by the SSRW curriculum among student participants and participant sub-group populations?* We present the findings of curriculum category pretest and posttests for the various student sample populations across school sites in the charts on the following pages.

¹⁴ A sample size of 290 is needed for a 0.30+ effect; a sample size of 175 is needed for an effect size of 0.40+ for $p < .05$.

Kindergarten/First Grade Student Participants Overall Sample

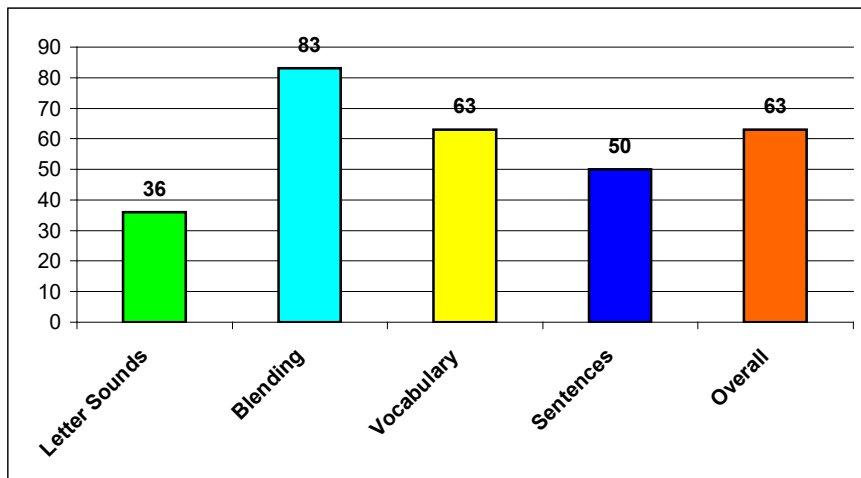
BESD Success Rate Percentage Gain



Sample n=540 K/1	Letter Sounds Effect Size	Blending Effect Size	Vocabulary Effect Size	Overall Effect Size
	0.34	0.39	0.24	0.33

Kindergarten/First Grade Participants Non-English Proficiency Sample

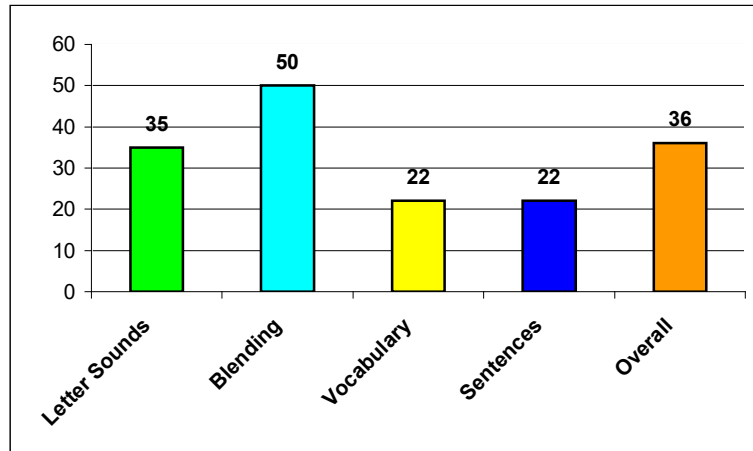
BESD Success Rate Percentage Gain



Sample n=128 K/1	Letter Sounds Effect Size	Blending Effect Size	Vocabulary Effect Size	Sentences Effect Size	Overall Effect Size
	0.37	0.60	0.53	0.43	0.54

Kindergarten/First Grade Student Participants Limited English Sample

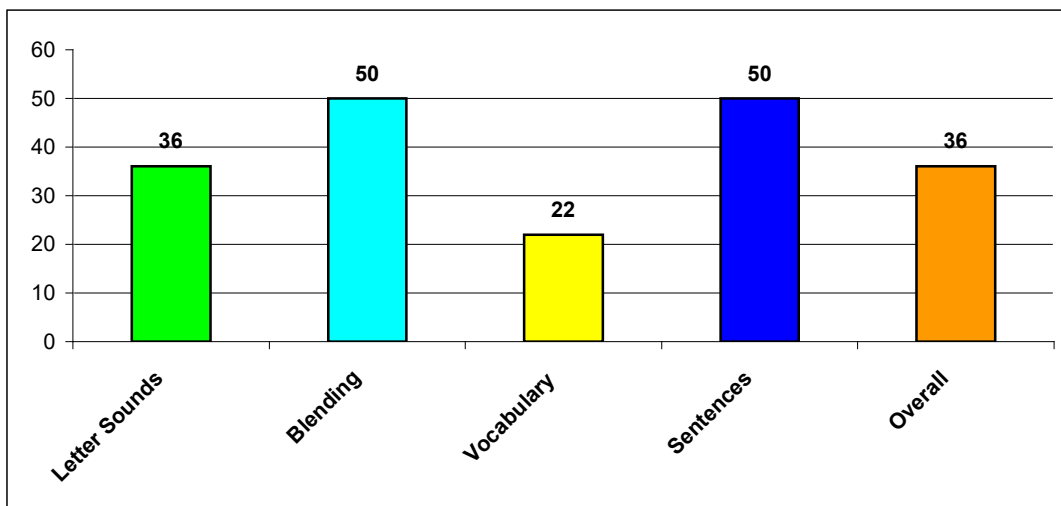
BESD Success Rate Percentage Gain



Sample n=169	Letter Sounds Effect Size	Blending Effect Size	Vocabulary Effect Size	Sentences Effect Size	Overall Effect Size
K/1	0.35	0.43	0.22	0.25	0.32

Kindergarten/First Grade Student Participants English Proficient Sample

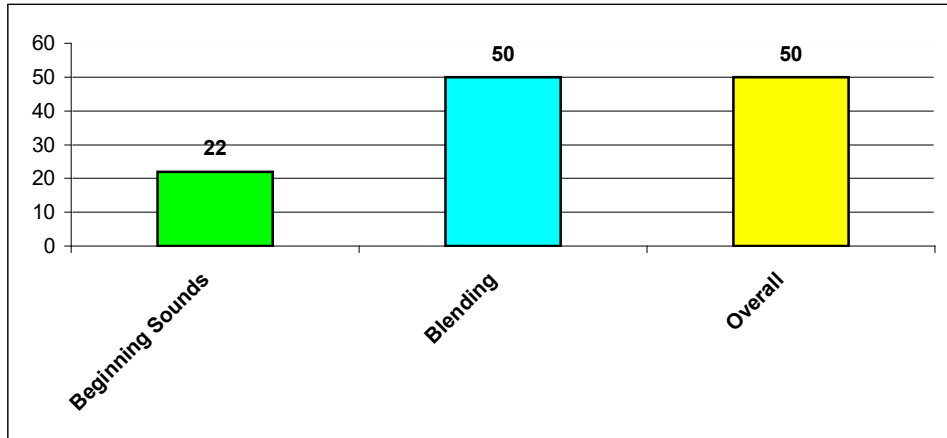
BESD Success Rate Percentage Gain



Sample n=121	Letter Sounds Effect Size	Blending Effect Size	Vocabulary Effect Size	Sentences Effect Size	Overall Effect Size
K/1	0.37	0.40	0.22	0.47	0.35

Second Grade Student Participants Overall Sample

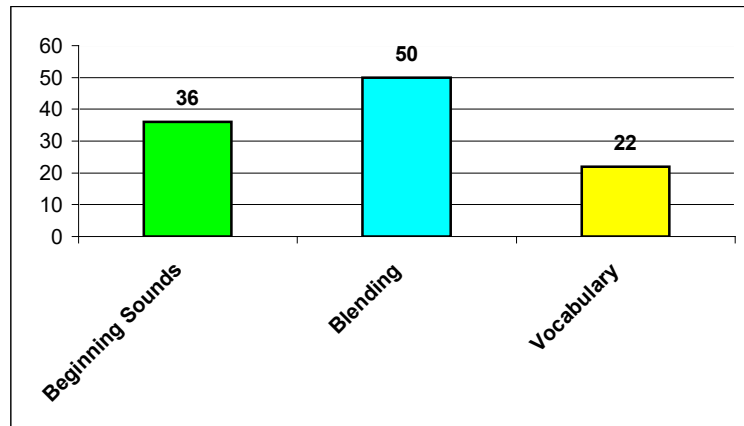
BESD Success Rate Percentage Gain



Sample n=250 Second Grade	Beginning Sounds Effect Size	Letter Cluster Effect Size	Overall Effect Size
	0.20	0.44	0.44

Second Grade Student Participants Limited English Sample

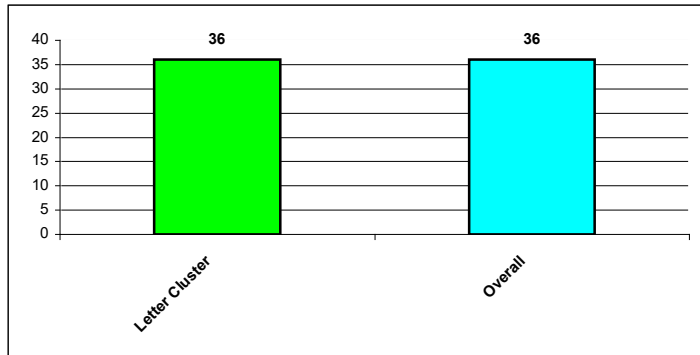
BESD Success Rate Percentage Gain



Sample n=103 Second Grade	Letter Sounds Effect Size	Blending Effect Size	Vocabulary Effect Size
	0.37	0.40	0.22

Second Grade Student Participants No Proficiency Designated Sample

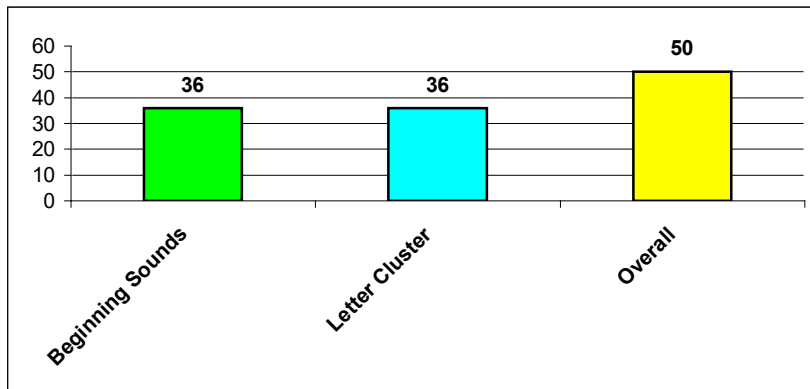
BESD Success Rate Percentage Gain



Sample n=119 Second Grade	Letter Cluster Effect Size	Overall Effect Size
	0.38	0.30

Second Grade Student Participants English Proficient Sample

BESD Success Rate Percentage Gain



Sample n=28 Second Grade	Beginning Sounds Effect Size	Letter Cluster Effect Size	Overall Effect Size
	0.36	0.35	0.43

Summary and Conclusions

The goal of this analysis was to determine if a four-week, 80-hour pilot test using the *Sing, Spell, Read and Write*® program as intervention curriculum is effective for elementary populations with various English language proficiencies. The data demonstrate that the intervention produced educationally significant effects for both the kindergarten/first grade and second grade participants overall, produced dramatic effects for students with *limited English proficiency* overall and across skill subsets, and produced significant effects and beneficial outcomes for participants with normal English language proficiency.

The program appears to be highly promising as a primary curriculum intervention, even for short summer sessions of even four weeks. The program demonstrated effects on curriculum subset skill areas in Letter Sounds, Beginning Sounds, Letter Clusters, Blending, Sentences, and Vocabulary.

Although a variety of teachers and ten different school sites in the San Francisco Unified School District tested the program, there was a very detailed implementation methodology provided for each site (see Appendix B). The approach to increase pedagogic consistency in implementing the program across sites may have contributed to the successful outcomes during the concentrated period of time.

These findings corroborate published research on the effectiveness of the SSRW program used for intervention¹⁵ for special at-risk populations and provide additional evidence for effectiveness in focused, short-term programs.

Appendix A

Additional Graphs

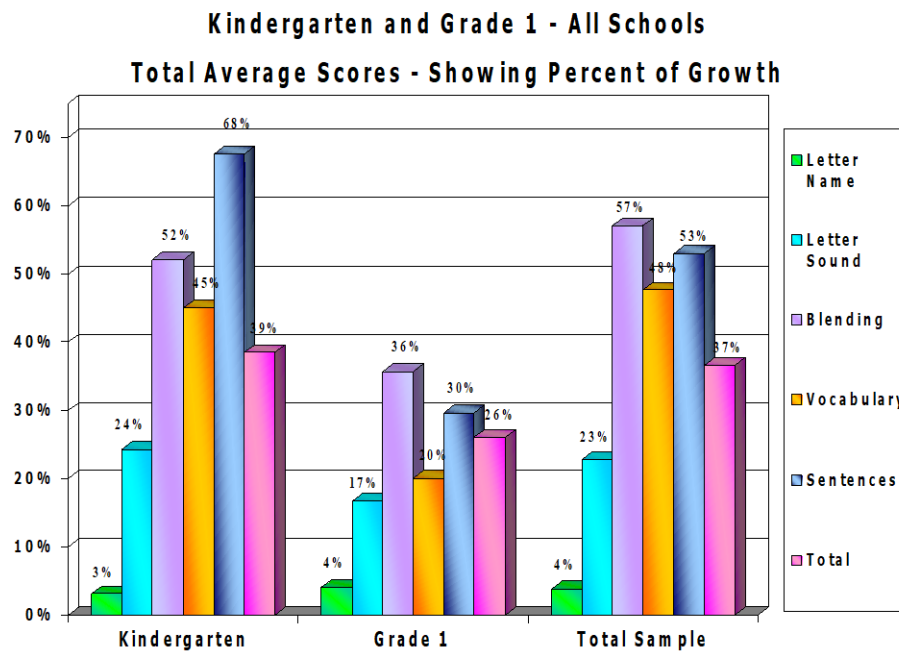


¹⁵ Bond, C., Ross, S, Smith, L. and Casey, J. (1993) *Longitudinal Study of Sing, Spell, Read and Write: Year One*, Memphis State University Center for Research in Educational Policy, Memphis, TN.

Kindergarten and Grade 1 Results

Graph 1 shows the percent of growth achieved by kindergarten and first grade participants during the program. Both kindergarten and first grade participants were administered the same pretest/posttest covering six curriculum areas.

Graph 1



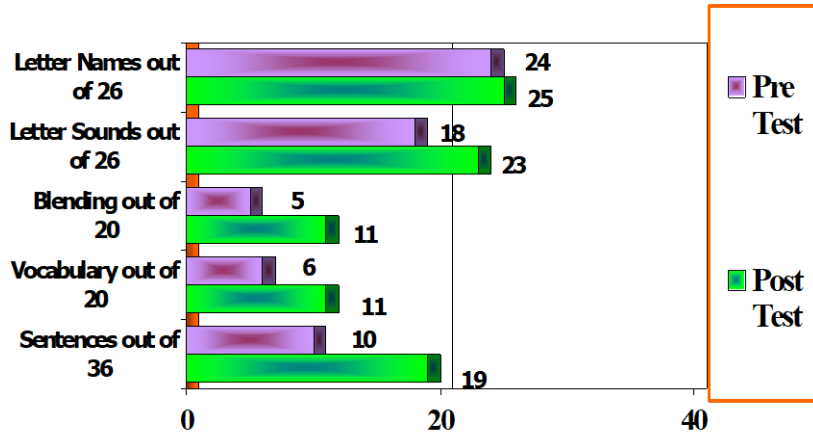
In terms of educational **effect**, the data were clear that the curriculum produced an effect of **0.43** for the kindergarten classes with a statistical power of $p < .05$.¹⁶ The effect size of the program on the first grade classes was **0.33**, also significant at $p < .05$.

The level of achievement across all fluencies for Kindergarten and First Grade is presented in **Graph 2** below.

¹⁶ These means that only 5 times out of 100 would the significance level be attributable to chance.

Graph 2

**All Fluencies
Kindergarten and 1st Grade
Average For All Schools**

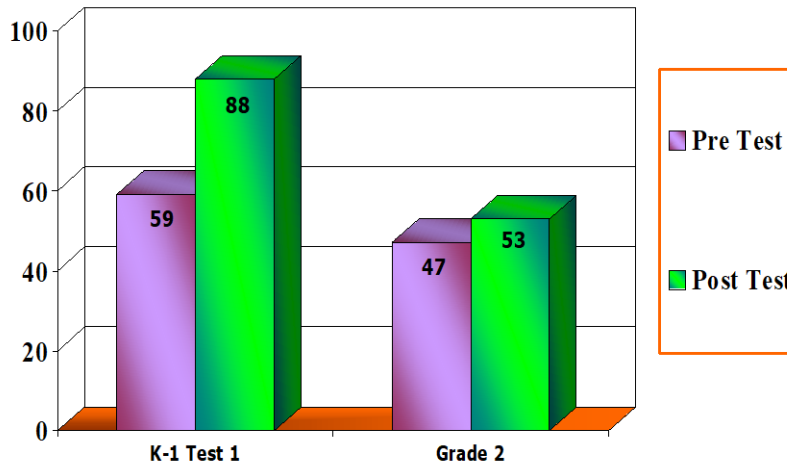


2

The impact of the summer program on the combined kindergarten/first grade sample and the total second grade sample is presented in **Graph 3**.

Graph 3

**San Francisco Summer School Pilot Program
Total Average Scores by Grade**



The effect size of the program on the kindergarten/first grade sample was **0.33** from pretest to posttest and for the Second Grade, **0.44**¹⁷ from pretest to posttest. Both results are educationally significant.

Program Effects by Grade and Language Proficiency¹⁸

All educationally significant effects presented in the tables that follow are highlighted. As can be seen in **Table 1**, the non-English proficient student participants made highly significant gains overall, and in blending and vocabulary skills in particular. As evidenced in **Table 2**, the kindergarten non-English participants made very dramatic gains in letter sounds.

Table 1
San Francisco Summer School Effect Sizes
Kindergarten and First Grade Combined

Sample	n	Overall	Letter Sounds	Blending	Vocabulary	Sentences
All Fluencies	540	.33	.34	.39	.24	.26
Non-English Proficiency	128	.54	.37	.60	.53	.43
Limited English Proficiency	169	.32	.35	.43	.22	.25
English Proficiency	121	.35	.37	.40	.22	.47

Table 2
San Francisco Summer School Effect Sizes
Kindergarten Sample Only

Sample	n	Overall	Letter Sounds	Blending	Vocabulary	Sentences
All Fluencies	258	.43	.35	.42	.37	.34
Non-English Proficiency	124	.36	.60	.51	.42	.53

Table 3
San Francisco Summer School Effect Sizes
First Grade Sample Only

Sample	n	Overall	Letter Sounds	Blending	Vocabulary	Sentences
All Fluencies	282	.33	.34	.42	.23	.27
Limited English Proficiency	108	.29	.27	.48	.20	.25

¹⁷ The graph for the Second Grade showing average score differences might mislead the reader to conclude a lesser effect than that achieved for the Kindergarten/First Grade classes. However, Kindergarten/First Grade had a different curriculum and different testing from that used in Second Grade.

¹⁸ Only samples large enough to be meaningful have been presented.

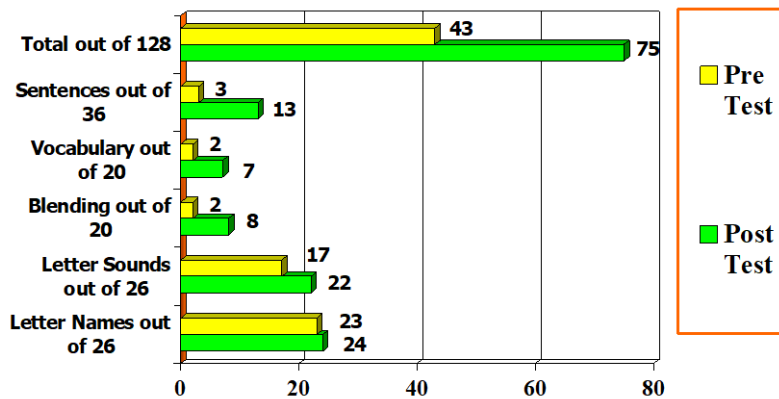
Perhaps the most dramatic outcomes of the pilot summer school program were achieved with the second grade participants with limited English proficiency. The 1.71 effect size overall is equivalent to a gain in SAT scores of 171 points.

Table 4
San Francisco Summer School Effect Sizes
Second Grade Sample

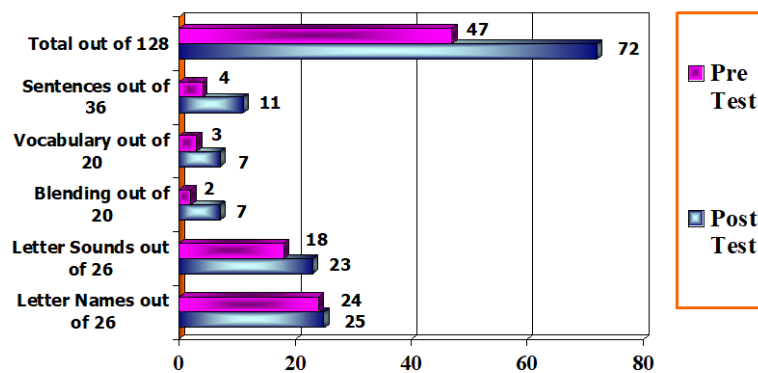
Sample	n	Overall	Beginning Sounds	Letter Cluster	Word Recognition	Sentences
All Fluencies	250	.44	.20	.42	.15	.09
Limited English Proficiency	103	1.71	.52	.66	.13	.19

Kindergarten Participants

Kindergarten - All Fluencies
 Average Scores Across All Schools

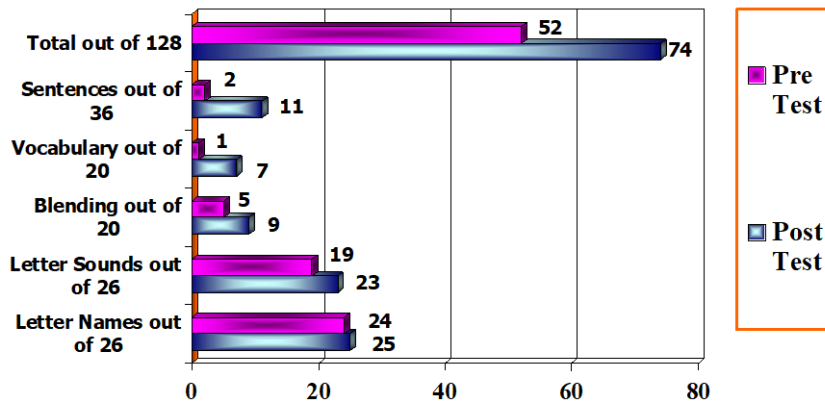


Kindergarten - Limited English
 Average Scores Across All Schools

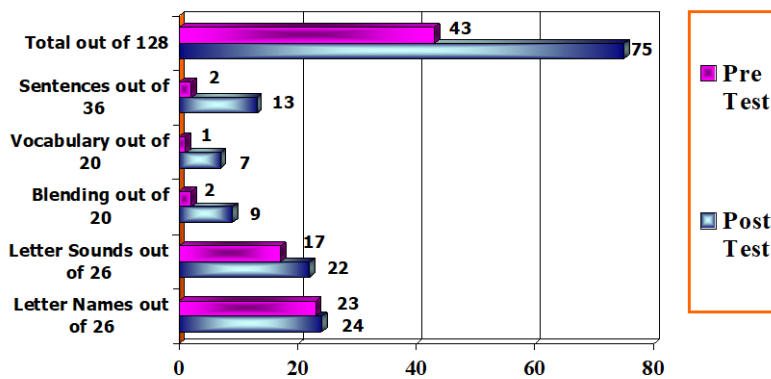


Kindergarten Participants (continued)

Kindergarten - Fluent English
Average Scores Across All Schools

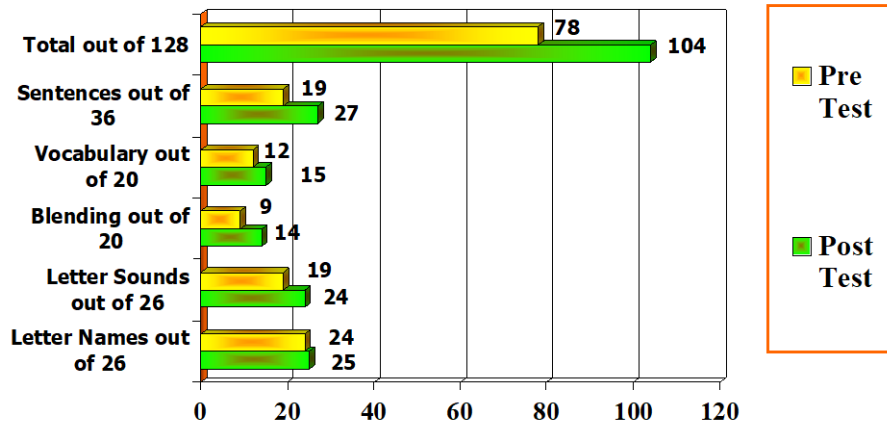


Kindergarten - Non-English Proficient
Average Across All Schools

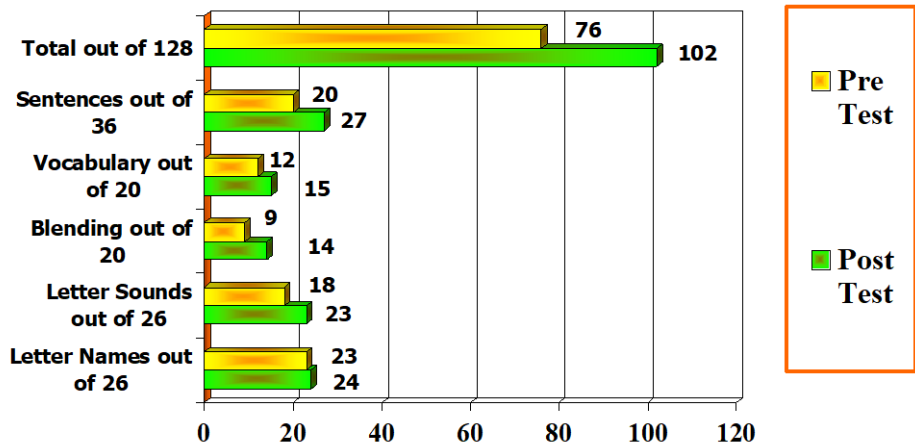


First Grade Participants

Grade 1 - All Fluencies
Average Across All Schools

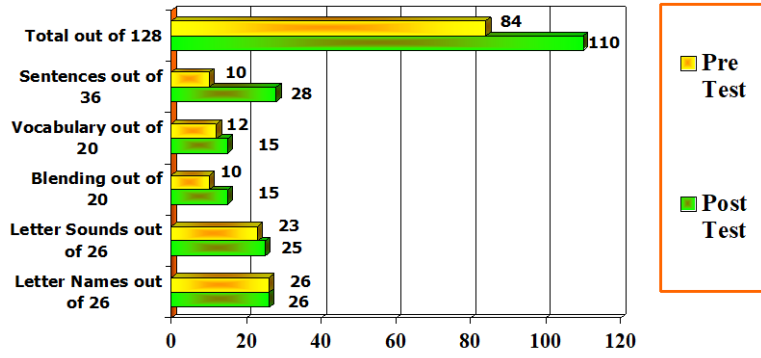


Grade 1 - Limited English
Average Scores Across All Schools



First Grade Participants (continued)

Grade 1 - English Proficient
Average Across All Schools



Appendix B

SSRW Tests used for Pre- and Post-Testing

Appendix C

Curriculum Implementation Guide