

**YEAR ONE REPORT: EVALUATION STUDY OF  
THE WRITING ROAD TO READING**

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**Arizona State University**

**June 2007**

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### **INTRODUCTION**

This project was initiated because Spalding Education International has seen positive results in test scores at schools where the Spalding *Writing Road to Reading* program has been implemented. The research project is being conducted to validate the effectiveness of this program in teaching reading to children from varied backgrounds who attend different types of schools. In many states, especially those where the federal No Child Left Behind Reading First program is implemented, the core reading programs selected for use in reading are required to use a scientifically research based reading program. Instructional decisions that support student achievement, particularly in reading, should rely on tested materials.

In addition, state and national initiatives are focusing on a standard expectation of reading for children by the third grade. The No Child Left Behind Act of 2001 and programs such as Reading First and Early Reading First support schools across the country in achieving early literacy. The National Reading Panel Report (National Institute of Child Health and Human Development [NICHD], 2000) provides a summary of the essential components of effective reading instruction. Reading research indicates that Phonemic Awareness, Systematic Phonics, Fluency, Vocabulary, and Text Comprehension are the five areas critical to literacy.

The ability to read is the most important skill children learn. Because success in life requires accurate spelling, accomplished writing and skilled reading, the purpose of Spalding Education International, home of *The Spalding Method*, is to bring literacy to students of all ages, regardless of economic status, ethnic diversity, disability or geography. Spalding strongly believes that its methods must demonstrate proven effectiveness in increasing student learning. As a result, it has contracted with Arizona State University to conduct an effectiveness evaluation of its *Writing Road to Reading* program.

### **RESEARCH DESIGN**

Arizona State University conducted the first of a four-year quasi-experimental study for Spalding in the 2006-2007 school year. The study involved 51 teachers and 1,213 students in the final study sample. In this first year, the study was conducted with kindergarten students in 5 treatment and 6 control schools. Schools/classrooms were matched on socioeconomic status of students, class size, student race/ethnicity, and the school's geographic location. These measures were taken to ensure that the treatment classrooms/schools did not differ significantly in their structure or composition from the control schools.

The purpose of this evaluation was to study the effectiveness of *The Writing Road to Reading* program in helping children attain critical reading skills. The study assessed teachers' implementation of the materials and measured the effect of the program on student achievement. Researchers also examined comparisons between children taught using Spalding's *Writing Road to Reading* and children taught using other, more traditional reading programs. Researchers

employed a variety of data collection methods including student standardized assessments (DIBELS), classroom observations, and teacher surveys.

This independent study, conducted by Arizona State University, assessed the effectiveness of Spalding's *Writing Road To Reading* in developing literacy across the state of Arizona. The report describes all the activities to date and presents the study results.

The following research questions guided the study design and methods:

1. Do children who participate in *The Writing Road to Reading* program demonstrate significant learning gains in reading skills during the study period?
2. How does the reading skill attainment of children participating in Spalding's *Writing Road to Reading* compare to that of children participating in other, more traditional reading programs?
3. How well do teachers implement *The Writing Road to Reading* in their varied classrooms?

## **METHOD**

This section presents descriptions of the different study components including measures, participants, and program procedures.

### **Teacher Measures**

The study evaluated teachers' implementation of Spalding's *Writing Road To Reading*. Researchers utilized a uniform quantitative instrument to measure how *The Writing Road to Reading* was being implemented in study classrooms. In order to measure program implementation, researchers collected data through classroom observations using the observation protocols. Four researchers, in teams of two or as a whole group, visited the teacher classrooms three times per year and observed individual teachers to ensure inter-observer agreement and reliability. The observation protocol was designed to measure constructs such as classroom management, adherence to program philosophy, and strategies for spelling, writing, and reading content. Classroom observations lasted for approximately 45 minutes to one hour and focused on whole group instruction.

Both treatment and control teachers completed a survey questionnaire that provided a variety of background information including degrees, certifications, endorsements, and professional development activities over the past ten years. Other items included length of time implementing reading programs, materials used, assessment practices, and the number of years teaching at the current grade level.

### **Student Measures**

Researchers employed the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) as the primary measure to assess changes in students' reading skills during the 2006-2007 school year. Researchers selected the DIBELS assessment because it has broad visibility, acceptance in the field, and it demonstrates high technical merit. The Arizona State Department of Education has adopted DIBELS as the assessment for its Reading First program.

Administration periods for DIBELS occur at the beginning, middle, and end of the school year, and subtests are designed for administration across multiple years. The DIBELS measures used in this study were Initial Sound Fluency, Letter Naming Fluency, Phoneme Segmentation Fluency, Nonsense Word Fluency, and Word Use Fluency. All participating students were first tested within the first three weeks of the 2006-2007 school year as required by the Arizona State Department of Education, again in January, 2007, and finally in May, 2007. The five sub-tests are described below.

*Initial Sounds Fluency (ISF)*

The DIBELS Initial Sounds Fluency (ISF) Measure is a standardized, individually administered measure of phonological awareness that assesses a child's ability to recognize and produce the initial sound in an orally presented word (Kaminski & Good, 1996, 1998; Laimon, 1994). The examiner calculates the amount of time taken to identify/produce the correct sound and converts the score into the number of initial sounds correct in a minute. ISF is a measure that assesses phonemic awareness skills. The Initial Sounds Fluency measure is typically given in pre-school and Fall and Winter of Kindergarten.

*Letter Naming Fluency (LNF)*

DIBELS Letter Naming Fluency (LNF) is a standardized, individually administered test that provides a measure of risk. Students are presented with a page of upper- and lower-case letters arranged in a random order and are asked to name as many letters as they can. The student is allowed 1 minute to produce as many letter names as he/she can, and the score is the number of letters named correctly in 1 minute. Letter Naming Fluency is given in Fall, Winter, and Spring of Kindergarten, and Fall of First Grade.

*Phoneme Segmentation Fluency (PSF)*

The DIBELS Phoneme Segmentation Fluency (PSF) measure is a standardized, individually administered test of phonological awareness (Kaminski & Good, 1996). The PSF measure assesses a student's ability to segment three- and four-phoneme words into their individual phonemes fluently. The PSF measure has been found to be a good predictor of later reading achievement (Kaminski & Good, 1996). The PSF task requires the student to produce verbally the individual phonemes for each word. PSF is a measure that assesses phonemic awareness skills. Phonemic awareness is the ability to hear and manipulate sounds in words. It is essential to learning to read in an alphabetic writing system. Phoneme Segmentation Fluency is given in Winter and Spring of Kindergarten, and Fall, Winter, and Spring of First Grade.

*Nonsense Word Fluency (NWF)*

The DIBELS Nonsense Word Fluency (NWF) measure is a standardized, individually administered test of the alphabetic principle - including letter-sound correspondence and of the ability to blend letters into words in which letters represent their most common sounds (Kaminski & Good, 1996). The student is presented an 8.5" x 11" sheet of paper with randomly ordered nonsense words (e.g., sig, rav, ov) and asked to produce verbally the individual letter sound of each letter or verbally produce, or read, the whole nonsense word. The student is allowed 1 minute to produce as many letter-sounds as he/she can, and the final score is the number of letter-sounds produced correctly in one minute. Because the measure is fluency based, students receive a higher score if they are phonologically recoding the word and receive a lower

score if they are providing letter sounds in isolation. NWF is a measure that assesses alphabetic principle skills. The alphabetic principle is composed of two parts:

- Alphabetic Understanding: Words are composed of letters that represent sounds.
- Phonological Recoding: Using systematic relationships between letters and phonemes (letter-sound correspondence) to retrieve the pronunciation of an unknown printed string or to spell words.

Nonsense Word Fluency is given in Winter (optional) and Spring of Kindergarten, and Fall, Winter, and Spring of First Grade.

#### *Word Use Fluency (WUF)*

The DIBELS Word Use Fluency (WUF) Measure is intended for most children from fall of kindergarten through third grade. A benchmark goal is not provided for WUF because additional research is needed to establish its linkage to other literacy skills (phonological awareness, alphabetic principle, and accuracy and fluency with connected text). The Word Use Fluency measure can be given from Fall of Kindergarten through the end of third grade.

#### **Participants**

This study was conducted in eleven diverse Arizona schools with a total of 1,213 participating kindergarten students. A quasi-experimental design was used to assign schools as a control or treatment school. Schools were matched on socioeconomic status of students, class size, race/ethnicity/gender of students, and geography. Table 1 lists the study schools, number of classes and number of students.

Table 1: *Schools Included in the Analysis*

Group	Name of School	# K Classes	# Students
Experimental	Alhambra	5	101
	Bret Tarver	6	148
	CTA-Liberty	5	124
	Gallego	4	101
	Valley Academy	6	123
<b>Total</b>	<b>5</b>	<b>26</b>	<b>597</b>
Control	#1 – M	4	116
	#2 – N	6	131
	#3 – O	4	102
	#4 – P	4	101
	#5 – Q	5	128
	#6 - R	2	38
<b>Total</b>	<b>6</b>	<b>25</b>	<b>616</b>

Classes in the treatment condition (5) used the Spalding curriculum an average of 90 minutes each day, while control classes (6) used their standard core programs. Twenty six kindergarten teachers participated in the study as a treatment group, while 25 teachers were in the control group for a total of 51 teachers. Teacher class size averaged 23 students. As an incentive for participation, treatment teachers received materials and training in *The Writing Road to Reading* program without charge. Control teachers each received \$200 gift certificates to a bookstore for classroom materials.

The experimental and the control groups are roughly equal in size, as shown in Table 2. Students were comparable across conditions, although there were more low SES students in kindergarten control than in kindergarten treatment classrooms. Matching the student demographics was the primary motive in selecting the control schools. The main concern was the proportion of minority students, particularly Hispanic. The experimental group has a higher percentage of English Language Learner (ELL) students who tend to experience more difficulties than the native speakers of English in developing their reading skills. On the other hand, the control group has a slightly higher percentage of children in the Free or Reduced Lunch program (F/RL), which indicates a lower socio-economic background.

As shown in Table 2 and 3, more than half of the students (56%) were male while 44% were female. Across grades and treatment conditions, approximately 50% of students were Hispanic, 34% White, 5% Asian, 3% Black, and 1% Native American. Of all students, 45% qualified for free- or reduced-priced lunch, while 33% were an English Language Learner.

Table 2 presents the student distribution information for the treatment and control groups. Of the 1,213 students, 597 were in the treatment group and the other 616 students were in the control group. The treatment group students were taught by 26 teachers at 5 schools, and the control students were taught by 25 teachers at 6 schools. Table 3 provides the same data but uses percentages to demonstrate the student demographics.<sup>1</sup>

*Table 2: Student Distribution by Student level variables*

	Treatment (n = 597)	Control (n = 616)	Overall (n = 1213)
Gender			
Female	277	255	532
Male	320	361	681
Ethnicity			
Asian	42	22	64
Black	19	20	39
Hispanic	286	315	601
Native Am	12	9	21
White	214	180	394
SES			
F/R	244	306	550
Language Ability			
ELL	212	193	405

<sup>1</sup> The total gender count (1,213) reflects those students who have at least two, of three, sequential data sets at year end. Student ethnicity data is based on district data obtained at the beginning of the study's academic year and does not reflect the total number of students tested because of enrollment changes during the year. The underlying demographic distribution was not altered with the overall sample increase of 94 students across the 11 school sites.

Table 3:  
*Demographics of the Experimental and Control Groups*

Group	% Girls	% ELL	% Hispanic	% Minorities	% F/RL
Experimental	46%	36%	48%	64%	41%
Control	41%	31%	51%	71%	50%

### **Program Description**

In this study, Spalding's *Writing Road to Reading* was compared to other reading programs such as Houghton Mifflin and Scholastic Reading.

*The Spalding Method* is a total language arts approach because it provides explicit, sequential, multisensory instruction in spelling (including phonics and handwriting), writing, and listening/reading comprehension. Spalding is a diagnostic method. That means assessment for learning is continuous so that instruction can be tailored to meet each child's individual needs.

A pervasive error in current reading instructional theory is that children will inductively discover the rules of the written language if they are immersed in a written language environment (Goodman & Goodman, 1979; Smith, 1971). Children discover the rules of their spoken language through simple immersion-but that is because their brains are prewired for speech. Their brains are not prewired for reading. Left to their own inductive devices, the vast majority of children will not discover how the written language works.

The core reading subskill is forming connections between speech and print. More technically, this comes down to connections between specific speech units (phonemes), and specific letters that represent them. Spoken words are sequences of phonemes. Different words are made up of different sequences of phonemes. Since letters represent phonemes, a different sequence of phonemes will be represented by a different sequence of letters. That is the fundamental literary principle in all languages that use alphabetic systems, and it has to be thoroughly mastered.

The Spalding program begins by teaching a set of phoneme-letter units that Spalding calls phonograms. There are seventy, the letters of the alphabet plus some multiple-letter units like "ea" and "ng". The letters represent minimal speech units (phonemes), not blends.

When children have learned about 45 phonograms, reading begins. After hours of phonogram learning, sequential word analysis, and graphic marking, children can read. They also start thinking and reasoning about content. From the very first day of reading, the emphasis can be on ideas, information, forming inferences, tracing implications, and the like, because the focus doesn't have to be on word-attack.

Dr. Robert C. Aukerman, in his book, *Approaches To Beginning Reading*, describes Spalding as a total language arts program because it "is an approach to learning the phonetic base of the language through listening, seeing, speaking, writing, spelling, and reading" (p.536). He devotes

10 pages to *The Spalding Method*, citing national scores from many schools that obtained exemplary test results.

In *Schooling*, Dr. Farnham-Diggory explains how Spalding-taught children learn to read almost without knowing it. "Spalding's most remarkable contribution is her invention of a marking system that enables children to connect spelling rules to reading. The system consists of five simple conventions... Using those conventions, students learn to mark the words they have spelled, in an atmosphere of problem solving. First the words are separated into syllables, and then the syllables are marked...in notebooks, which eventually become personal glossaries filled with hundreds of marked words ... After spelling a word, the student reflects upon it and abstracts both its components and the rules they embody" (p. 127-128).

## **PROGRAM IMPLEMENTATION & RESULTS**

This section presents the results of the classroom implementation study and the student assessment scores.

### **Implementation by Treatment Teachers**

The classroom observations were the primary measure for classroom implementation. The goal for observations is to see consistent Spalding instruction across grade levels and schools. Observers noticed an increase in consistency within and across the five schools by the fourth-quarter observations. This is attributed to consistent use of the *Kindergarten Teacher Guides*.

According to the researchers' observation protocols, at least 60% of treatment teachers implemented the program with high fidelity and 30% implemented it with moderate fidelity. The final observation summary showed that in the area of program philosophy, all teachers made children's physical and mental well-being a primary concern and they provided direct sequential, instruction.

In terms of adherence to the program philosophy, some teachers still needed to 1) use the Collins Model of Instruction in all lessons, 2) maintain a well-organized and disciplined classroom so all children have the opportunity to learn, and 3) provide consistent multisensory instruction. Additional suggestions for some teachers were that they have high expectations for all children, ask higher-level thinking questions, e.g., move from knowledge to application questions, and demonstrate the connection between the spelling, writing, and reading objectives, e.g., "Now that we have entered spelling words, let's see how to use them in sentences." Or, "Now that you have practiced phonograms, let's see how well you can use them as you read today."

By the end of the year, in the area of Spelling all teachers followed the initial Oral Phonogram Review (OPR) procedures correctly. In addition, most teachers allowed children to do most of the work in OPR, Written Phonogram Review (WPR), and dictation lessons, followed by the next steps of OPR and WPR procedures. Most teachers were also observed to correctly follow dictation procedures. Noted refinements in this area suggested that a few teachers more closely follow OPR and WPR Procedures as found in the *Guide*.

In the area of Writing most teachers provided good model sentences most of the time, coached as children composed oral sentences for spelling words, and coached as children categorized spelling words by parts of speech. Some teachers also coached as children composed a narrative or an informative paragraph using graphic organizers.

The area of Writing had the most items in need of refinement by some of the year one teachers. These included:

- Model good sentences *first* before having students compose oral sentences that demonstrate meaning and usage.
- Encourage children to do the thinking and composing of oral sentences after teacher's model.
- Provide additional models for children who have difficulty identifying the parts of speech.

In the area of Reading, observation results indicated that most teachers have children reading decodable books in unison and independently with appropriate coaching. Most teachers were also able to coach effectively as children identified author, author's purpose, and basic elements (text structure). Some teachers were able to coach as children read literature books in unison, and they had children read expressively in unison and individually. Some teachers also coached as children used all five mental actions with a *McCall-Crabbs* passage.

Last, in the Reading area, some suggested refinements at the end of year one included having teachers walk around to monitor active participation, as well as the following:

- Model use of the first three mental actions by 1) using only one or two difficult words, 2) making connection with sentences in passage or prior knowledge to figure out the difficult word(s), and 3) initially predicting *only* type of writing to keep the task simple.
- Have students identify and label the last two mental actions after they understand and can use the first three.
- Allow students to articulate their thinking to enhance their comprehension.

### **Student Performance Results**

The DIBELS tests administered to Kindergarten students in Fall 2006 were Initial Sound Fluency (ISF), Letter Name Fluency (LNF) and Word Use Fluency (WUF). Two treatment schools and three control schools did not administer the Word Use Fluency in Fall of 2006.

The DIBELS tests administered in Winter 2007 were ISF, LNF, Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency (NWF), and Word Use Fluency (WUF). Four schools (two treatment and two controls) did not administer the Word Use Fluency in Winter, 2007. One treatment school also did not measure NWF in the Winter round of testing. During the spring testing, the schools used Letter Name Fluency (LNF), Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency (NWF), and Word Use Fluency (WUF). The same sets of schools were compared, without adjusting the sample for each test.

Table 4 displays the comparative performance of the Spalding and the control students on the DIBELS that were administered in the Fall of 2006, Winter, and Spring of 2007.

Table 4: *Comparative Mean Scores of Spalding and Control Kindergarten Students on the DIBELS (Fall 2006, Winter 2007, Spring, 2007)*

		Experimental	Control	Difference
Fall, 2006	Initial Sound	10.80*	7.32	+3.48
	Letter Name	15.81*	10.79	+5.02
	Word Use	12.01*	3.23	+8.78
Winter, 2007	Initial Sound	18.99	17.37	+1.62
	Letter Name	32.75*	28.44	+4.31
	Phoneme Segmentation	27.77*	20.21	+7.56
	Nonsense Word	26.61*	20.28	+6.33
	Word Use	22.89*	9.51	+13.38
Spring, 2007	Letter Name	47.97**	44.39	+3.58
	Phoneme Segmentation	47.68*	39.62	+8.06
	Nonsense Word	46.17*	35.36	+10.81
	Word Use	39.91	26.92	+12.99

\*p<.001

\*\*p<.005

According to our findings, the **Spalding K students had consistently higher mean values** on all DIBELS areas, which indicates that Spalding has been more effective than all the other methods used in the control schools in teaching those reading skills, in spite of the fact that the experimental/Spalding group included a higher percentage of ELL students.

As shown in Table 5, the initial variability, measured as Standard Deviation, was higher in the Spalding classes, indicating that the K students' learning of reading skills varied more in the Spalding classes.

It is possible that certain students had little attention control training prior to Kindergarten. Consequently, their attention was more dispersed, and they had to invest more effort into focusing on the learning tasks. This situation is likely to have diminished their capacity for processing lesson content, with the result of slower learning progress and lower performance on the first few waves of DIBELS.

This hypothesis seems to hold true, as the discrepancy between the Standard Deviations of the Spalding and the control students was expected to diminish over time. In fact, by Spring, 2007 testing, variability in Spalding students' scores was lower than or roughly equal to those of control student scores in every category. Table 5 provides a more detailed description of the study statistics.

Table 5:

*Comparative DIBELS Statistics of the Spalding and Control Kindergarten Students (Fall 2006, Winter and Spring, 2007)*

	Fall, 2006			Winter, 2007					Spring, 2007			
	ISF	LNF	WUF	ISF	LNF	PSF	NWF	WUF	LNF	PSF	NWF	WUF
<b>Spalding, Experimental Schools</b>												
N, Valid	562	562	311	541	542	541	424	298	538	538	537	300
Missing	35	35	286	56	55	56	173	299				
Mean	10.80	15.81	12.01	18.99	32.75	27.77	26.61	22.89	47.97	47.68	46.17	39.91
Std. Devia	10.348	16.168	15.587	12.606	19.022	17.956	18.256	18.106	18.117	16.507	25.772	18.12
Skewness	1.700	1.101	1.499	1.407	.119	.344	1.376	.253	-.138	-.816	1.330	-.778
Kurtosis	5.007	.985	3.024	4.911	-.676	.498	4.151	-.781	-.066	.971	2.388	.057
Max	80	78	99	107	87	109	135	74	96	108	145	77
<b>Control Schools</b>												
N, Valid	526	526	261	543	549	549	549	336	528	529	529	321
Missing	90	90	355	73	67	67	67	280				
Mean	7.32	10.79	3.23	17.37	28.44	20.21	20.28	9.51	44.39	39.62	35.36	26.92
Std. Devi	8.052	13.916	7.506	13.847	19.898	16.850	22.029	13.318	20.812	19.52	25.253	17.698
Skewness	1.709	1.353	3.065	1.416	.313	.217	1.499	1.489	.066	-.550	1.143	.220
Kurtosis	3.811	1.000	10.203	4.526	-.804	-1.357	2.944	1.722	-.462	-.573	2.598	-.868
Max	48	60	46	100	78	60	123	66	98	83	146	74

Students in both groups improved over time; however, in every category the treatment group students had higher mean scores than control group students by an average of nearly seven points. Excluding Winter ISF, in each DIBELS testing area, treatment students significantly outperformed their control counterparts.

As shown above, students in both the treatment and the control groups improved in reading skills by the end of year one. In addition, as shown in Table 6 below, both groups tested above their current grade level on the posttest assessment.

Table 6  
*Kindergarten Students' Mean Post-Scores on DIBELS*

		Mean Test Scores		
		Treatment	Control	DIBELS End of Kindergarten Low risk score
		(n = 538)	(n = 529)	
Letter Name Fluency (LNF)	Spring test	47.97	44.39	40
Phoneme Segmentation Fluency (PSF)	Spring test	47.68	39.62	35
Nonsense Word Fluency (NWF)	Spring test	46.17	35.36	25

According to DIBELS decision rules, at the end of kindergarten it is important for students to have established phonemic awareness of Phoneme Segmentation Fluency (PSF) and to be at low risk on Nonsense Word Fluency (NWF). Strong performance in these two subtests increases the student's odds of achieving subsequent literacy goals. According to their research findings, for most students who achieved 35 on PSF and 25 on NWF, the odds of achieving first grade reading outcomes were 68 percent to 92 percent.

As shown in Table 7, additional analyses of the extent to which treatment students experienced learning gains between the beginning and the middle of the school year show that they met the DIBELS decision rules benchmarks for achievement. The only discrepancy was in the midyear performance for ISF which did, however, fall below the benchmark score for both the treatment and for the control group.

As can be seen in Table 7, Spalding participants experienced significant gains in reading performance from the beginning, to the middle and end of the school year.

Table 7: DIBELS cut scores for bench marks

		ISF	LNF	PSF	NWF
Beginning					
	DIBELS Benchmark	8	8		
	Treatment	10.8	15.81		
	Control	7.32	10.79		
Middle					
	DIBELS Benchmark	25	27	18	13
	Treatment	18.99	32.75	27.77	26.61
	Control	17.37	28.44	20.28	20.26
End					
	DIBELS Benchmark		40	35	25
	Treatment		47.77	47.68	46.17
	Control		44.39	39.62	35.36

Because of the rate of improvement in the control student's scores, an analysis of covariance (ANCOVA) was conducted to examine whether students who participated in the program experienced significant learning gains, controlling for their initial scores. Three of the tested areas (PSF, LNF, and NWF) were initially tested in the winter and again in the spring. An ANCOVA was used to control for the initial scores for the treatment and for the control group. The covariate was the first test in the areas during the winter, 2007. The adjusted year end scores were analyzed to compare the treatment and control group after each group improved over time. ANCOVA results revealed a significant difference in PSF and NWF scores among the two groups. The adjusted means for the treatment group ( $M = 46.17, 46.56$ ) versus the control group ( $M = 40.29, 35.98$ ) was significantly higher ( $p < .01$ ). The adjusted means for the two groups were not significantly different from each other on the LNF items ( $p > .10$ ).

This is a significant achievement because as noted earlier, according to DIBELS decision rules, at the end of kindergarten it is important for students to have established phonemic awareness of Phoneme Segmentation Fluency (PSF) and to be at low risk on Nonsense Word Fluency (NWF). Strong performance in these two subtests increases the students' odds of achieving subsequent literacy goals. According to their research findings, for most students who achieved 35 on PSF and 25 on NWF, the odds of achieving first grade reading outcomes were 68 percent to 92 percent. The Spalding students' statistically higher and significant performance in these two areas bodes well for their continued reading success.

## DISCUSSION

According to the year one results, students who used *The Writing Road to Reading* demonstrated significant learning gains as measured by DIBELS. In addition, their scores were significantly higher than control group students except for the Winter ISF score.

These preliminary findings suggest that use of *The Writing Road to Reading* curriculum was effective in enhancing performance on critical early literacy skills among emergent readers particularly in the area of phoneme segmentation and nonsense word fluency. Phonemic awareness is critical to learning to read English (Wagner, Torgesen, & Rashotte, 1994). According to the report *Reading First, A Closer Look at the Five Essential Components of Effective Reading Instruction*:

Phonemic awareness can also be used to predict how well children will learn to read. Researchers were able to identify who would learn to read more easily and who would have difficulty by measuring the extent to which children had developed phonemic awareness (Share, Jorm, Maclean, & Matthews, 1984). More importantly, a number of studies have shown that teaching phonemic awareness to young children significantly increases their later reading achievement (Cunningham, 1989; Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; Lundberg, Frost, & Peterson, 1988).

Spalding's *Writing Road to Reading* is a highly comprehensive program providing students with about 90 minutes of literacy instruction daily. As students move through the program over multiple years the cumulative learning effect is expected to better prepare students for the next year and result in all children rising to meet higher standards of learning. This is also the case because each 90 minute lesson includes integrated spelling, writing, and reading lessons. Therefore, the full impact of the program may not be completely evident during the first year of implementation at the kindergarten level. In addition, variations in the administered tests decline in first grade which will decrease the variability in the level of test score responses.

In summary, preliminary results of this one-year study provide strong evidence of the efficacy of *The Writing Road to Reading* in building kindergarten early literacy skills. After less than one year of implementation, children in treatment classrooms performed better than children in control classrooms on all DIBELS measures. These findings demonstrate the power of Spalding's *Writing Road to Reading* in providing the explicit, targeted instruction required to build a strong foundation for ongoing reading development.

This study was conducted in eleven diverse Arizona schools with a total of 1,213 participating kindergarten students.

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