
USE OF EVIDENCE-BASED, SMALL-GROUP READING INSTRUCTION FOR ENGLISH LANGUAGE LEARNERS IN ELEMENTARY GRADES: SECONDARY-TIER INTERVENTION

*Debra Kamps, Mary Abbott, Charles Greenwood, Carmen Arreaga-Mayer,
Howard Wills, Jennifer Longstaff, Michelle Culpepper, and Cheryl Walton*

Abstract. This experimental/comparison study of secondary-level, small-group instruction included 318 first- and second-grade students (170 ELL and 148 English-only) from six elementary schools. All schools served high numbers of ELL students with varying school SES in urban and suburban communities. Experimental schools implemented a three-tier model of intervention. In addition to primary-tier reading instruction, the second-tier, small-group experimental interventions included use of (a) evidence-based direct instruction reading curricula that explicitly targeted skills such as phonological/phonemic awareness, letter-sound recognition, alphabetic decoding, fluency building and comprehension skills; and (b) small groups of 3 to 6 students. Students at comparison schools were not exposed to a three-tier reading program but received (a) an ESL intervention using balanced literacy instruction with a focus on word study, group and individual story reading, and writing activities; and (b) small groups of 6 to 15 students. The ESL/balanced literacy intervention was generally in addition to primary reading instruction. Results indicated generally higher gains for ELL students enrolled in direct instruction interventions. Implications for research and practice are discussed.

*Debra Kamps, Ph.D., associate director, Juniper Gardens Children's Project, University of Kansas.
Mary Abbott, Ph.D., assistant research professor, Juniper Gardens Children's Project, University of Kansas.
Charles Greenwood, Ph.D., director, Juniper Gardens Children's Project, University of Kansas.
Carmen Arreaga-Mayer, Ph.D., consultant, Juniper Gardens Children's Project, University of Kansas.
Howard Wills, Ph.D., assistant research professor, Juniper Gardens Children's Project, University of Kansas.
Jennifer Longstaff, M.S., director of academics, Della Lamb Elementary Charter School, Kansas City, Missouri.
Michelle Culpepper, M.S., assistant director of curriculum, Della Lamb Elementary Charter School, Kansas City, Missouri.
Cheryl Walton, Ph.D., Title I teacher, Resurrection Elementary School, Kansas City, Kansas.*

The percentage of public elementary and secondary school students in the United States who were identified as English language learners (ELL) rose from 5.1% in the 1993-94 school year to 6.7% of the total school population in the 1999-2000 school year (U.S. Department of Education, 2000). This represents an increase of over 920,000 ELL students in our public schools in a six-year period. Although there is not a direct correlation between ELL students and ethnicity, the large percentage increase of the ELL school population is due to growth in the Hispanic subpopulation.

This growing school population has an impact on the instructional environment across America's schools. As a group, Hispanic students traditionally perform poorly on national assessments. According to the 2005 National Assessment of Educational Progress (NAEP) (U.S. Department of Education, 2005), only 13% of fourth-grade Hispanic students and 15% of eighth-grade students meet proficiency reading standards. At the same time, the statement of purpose in No Child Left Behind legislation notes "that all children will have a fair, equal, and significant opportunity to receive a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments" (Section 1001, p. 15). That statement includes ELL populations, and as ELL populations increase so do the pressures on teachers, schools, districts, and states to increase the numbers of ELL students who meet state-governed reading proficiency (Anderson et al., 1998).

The specific skills students need to learn to become good readers and perform adequately on assessments are well established. These skills include phonemic awareness, phonics, vocabulary, comprehension, and fluency (National Reading Panel, 2000). The National Reading Panel suggests that teachers working with ELL students must be sensitive to the fact that the sounds of English and other phonetic languages are not exactly the same and that these differences may constitute an area of difficulty for students in learning English word structures. Additionally, challenges in vocabulary proficiencies affect comprehension. However, existing ELL research suggests that all children, regardless of primary language, must learn these essential reading skills and that English-driven reading instruction with these skills is linked to reading success (Baker & Gersten, 1997; Garcia, 2000; Gersten & Geva, 2003).

For students who have reading challenges, intervention research suggests that instruction should be (a) evidence-based and (b) explicitly taught, and that (c) the curricula should include a scope and sequence of essential reading skills (Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998). One such program

that has a long history is direct instruction (DI; Adams & Englemann, 1996).

DI teaches beginning reading word recognition skills by explicitly and systematically teaching phonemic awareness, phonics, and vocabulary skills. Numerous DI studies with non-ELL students and with Hispanic and Asian ELL populations have reported medium to strong effect sizes (Becker & Gersten, 1982; Gersten, 1985; Stebbins, St. Pierre, Proper, Anderson, & Cerva, 1997). For example, in an experimental-control group study of 122 kindergarten to third-grade Hispanic and non-Hispanic struggling readers, Gunn, Biglan, Smolowski, and Ary (2000) found that after two years of small-group instruction with *Reading Mastery* and *Corrective Reading*, the experimental group significantly outperformed the controls on letter identification, word attack, fluency, reading vocabulary, and passage comprehension. These findings demonstrate that a systematic curriculum is a critical component of interventions for both ELL and non-ELL students who struggle learning to read.

In addition to the specific reading skills one needs to learn to read, research suggests that factors such as the instructional environment (Arreaga-Mayer, Utley, Perdomo-Rivers, & Greenwood, 2003; Haager & Windmueller, 2001; Kamps & Greenwood, 2005) and instructional dosage such as intensity and duration are also critical components to improve instruction for students who have difficulty learning to read (Torgesen, 2000; Torgesen et al., 2001; Vaughn, Mathes, Linan-Thompson, & Francis, 2005).

Haager and Windmueller (2001) studied student and teacher outcomes with ELL learners in a high-risk school. They concluded that in addition to using evidence-based reading practices, ongoing teacher support with student monitoring, while challenging, is essential for improving student outcomes. Torgesen (2000) suggested that the gains made with the lowest performing students can be attributed in part to the number of hours the intervention lasts and the intensity of learning. Intensity consists of instructional changes such as a more parsed sequence of skills, double doses of daily intervention, and/or smaller grouping sizes. Haager and Windmueller (2001) and others (e.g., Torgesen, 2000; Torgesen et al., 2001; Vaughn et al., 2005) reported that such a process may require long-term intervention.

In summary, the National Reading Panel's recommended reading skills for learning to read English are essential for all children, regardless of ethnicity, primary language, or socioeconomic status (SES). Additionally, for all students, but especially for student populations who traditionally struggle to meet minimum academic standards, appropriate instructional intensity and con-

sistent progress monitoring are critical to improving student outcomes.

One proposed approach that integrates and organizes these critical components for all learners is a three-tiered model of primary, secondary, and tertiary instruction (Fuchs & Fuchs, 2006). Within the three-tiered system, a response-to-intervention (RTI) model addresses the specific educational process of implementing increasing tiers of targeted instruction. RTI provides guiding parameters to decide academic placement and instruction based on student progress. This keeps the focus on the student's learning and the educational environment, and tracks the extent to which academic and instructional goals are met.

In a three-tier model, the first tier is primary instruction provided in general education, using evidence-based strategies to promote learning to read for the majority of students. All students are part of this tier of instruction. Formative academic screening of all students identifies the Tier-1 response to instruction. Students who fail to reach academic benchmarks are assigned to additional second-tier instruction.

The second tier, characterized by small-group intervention, can be provided by general educators and/or by a reading specialist and is designed to provide targeted intervention to enable students to "catch up" on critical reading skills. Within this tier, students' response to intervention is monitored beyond the screening measure. A continual system of academic progress monitoring is in place. This monitoring may measure percent toward benchmark or mastery of specific skills. Students who fail to make sufficient progress with Tier-2 interventions are moved into Tier 3.

In the third tier, long-term tertiary instruction is provided by reading or special education instructors in individualized grouping. In Tier-3 intervention, progress is further monitored, and the length of intervention increases (Fuchs, Mock, Morgan, & Young, 2003). Students in this tier of instruction are likely to fail to reach benchmark.

In an RTI environment, in addition to measuring academic success by benchmark, change in slope on students' intervention assessments provides a measure of student academic response to treatment. The difference in slope lines between different treatment conditions yields a comparative analysis of which treatment might work better over extended periods of time.

There are several advantages to implementing a three-tier/RTI system (Vaughn & Fuchs, 2003). Since ELL student achievement is, by national standards, lower than non-ELL student achievement, changing the emphasis of student progress from general reading assessments (i.e., standardized assessments) to ongoing instructionally relevant assessments has the potential to provide

educators and parents with a better way of improving student outcomes. Assurances that students' intervention progress is continually monitored and that there are specific procedures and measurements for further adapting primary-, secondary-, and tertiary-level instruction and intervention place the focus on the educational environment and reduce the possible explanations for academic failure (Fuchs & Fuchs, 2006). For ELL students, the secondary level of instruction provides the opportunity for further fine-tuning and supplemental instruction to meet the unique academic needs of the student. When instruction can be more closely focused and progress monitored, student academic outcomes should improve.

The purpose of the present study was to describe evidence-based secondary-tier interventions and outcomes in schools serving ELL students. Results are analyzed for all students in the experimental and comparison schools. Results are then analyzed for the ELL students in terms of how they compare to English-only classmates, their performance based on secondary-level curriculum, and the percentage reaching benchmark. The following research hypotheses were addressed.

1. All students (ELL and English-only) in the experimental schools (three-tier model of intervention) will demonstrate significantly more growth in measures of early literacy skills over time than students in the comparison schools.
2. ELL students enrolled in secondary interventions will perform at similar levels on measures of early literacy skills to English-only students enrolled in interventions.
3. ELL students enrolled in direct instruction, secondary-tier interventions will progress at a faster rate of growth than students enrolled in ESL/balanced literacy interventions.
4. A larger percentage of students enrolled in direct instruction, secondary-tier interventions will perform at benchmark levels than students enrolled in ESL/balanced literacy interventions.

METHOD

Participants

Students were selected from a larger experimental investigation examining the effects of schoolwide three-tier intervention models at the Kansas Center for Early Intervention in Reading and Behavior. This investigation included 16 schools over a five-year period, 10 schools in the experimental group and 6 schools in the comparison groups. Schools were randomly assigned using a stratified procedure with (a) ranking of schools by SES status and (b) randomly selecting one from each pair (i.e., 1st and 2nd, 3rd, 4th, etc.) as experimental or comparison. In the larger study, students were enrolled

across multiple years, and of the total students ($N = 1,036$) enrolled in that study during the initial years, 318 children were included for the present study. The criteria for inclusion in the data analysis for the current study were (a) the student was enrolled in one of the six participating schools with ELL students, (b) parent consent was obtained, and (c) the students participated in the study during the first and second grade, thus contributing data for those two years.

A total of 164 males and 154 females participated in the current study. As presented in Table 1, 148 were English-only students and 170 were ELL students. Spanish was the primary language for 99 of the students. For the other 71, their primary languages included Somalian, Sudanese, and Vietnamese. Two groups of students were included in the sample: (a) students at risk for reading failure and enrolled in secondary-level reading intervention, the focus of this analysis; and (b) students not at risk, and thus enrolled

in the primary-level or core reading intervention only. To qualify as being enrolled in secondary-level intervention, the student had to receive intervention in the first and/or second grade. Table 1 shows the breakdown of students by school, by intervention group (i.e., "secondary intervention" or "primary intervention"), and by English-only or ELL status. A total of 117 students (84 ELL, 33 English-only) were in secondary-level intervention in the experimental group and 113 (60 ELL, 53 English-only) in the comparison group.

School settings. Student data from six schools were included in the study as described. Table 1 presents census and demographic data from the schools. More urban schools participated in the current study ($N = 4$) than suburban schools ($N = 2$), and the urban experimental schools contributed more ELL students. The majority of the schools were in communities serving poor families, with 84% or greater having free and reduced-cost lunch status (Schools 1, 2, 4, and 5).

Table 1
Experimental and Comparison School Sites

Experimental Schools	% Minority	% ELL	% Free, Reduced-Cost Lunch	Secondary Intervention:		Primary-Only Intervention:		Total
				English	ELL	English	ELL	
1 Urban	95%	49%	90%	7	30	8	18	63
2 Urban	87%	60%	87%	19	41			60
3 Suburban	48%	22%	21%	7	13	31	2	53
				33	84	39	20	176
Comparison Schools	% Minority	% ELL	% Free, Reduced-Cost Lunch	Secondary Intervention:		Primary-Only Intervention:		Total
				English	ELL	English	ELL	
4 Urban	85%	37%	97%	23	40			63
5 Urban	91%	13%	84%	13	14	5	1	33
6 Suburban	27%	4%	21%	17	6	18	5	46
				53	60	23	6	142
Grand Total				86	144	62	26	318

Cultural diversity was also high in these four schools (see Table 1). School 4 dropped from the study after one year; thus, students at this school had either first- or second-grade data for comparison purposes.

Procedures: Primary- and Secondary-Tier Interventions

Experimental and comparison schools implemented secondary reading interventions that differed both in curriculum and grouping size. The secondary interventions in our experimental schools (Schools 1-3) implemented a direct instruction approach with three different curricula: *Reading Mastery* (SRA, 1995 edition), *Early Interventions in Reading* (Mathes & Torgesen, 2005), and *Read Well* (Sprick, Howard, & Fiddanque, 1998). Each is described as an "integrated curriculum" using direct instruction strategies, teacher modeling, and multiple activities and repeated practice to teach and reinforce new skills. A fourth curriculum, *Read Naturally* (Ihnot, 2002), was used to build fluency in second grade.

With the exception of *Read Naturally*, in which the teacher facilitates student-led mastery on text fluency and varying levels of comprehension, each of these curricula uses structured and sequenced scripted lessons with a heavy focus on phonemic awareness, including phonics instruction, and a philosophy of teaching to mastery. As an example, the activities found in the *Early Interventions in Reading* program include (a) phonemic awareness tasks of oral blending, stretching, and sound discrimination; (b) letter sounds (new and review) using "see, hear, say, write" practice; (c) alphabetic decoding using sounding out, reading fast, and chunking tasks; (d) reading of tricky words, connected text, step-by-step stories (from the *Open Court* series), and phonics mini-books to build fluency; (e) comprehension activities, including sequencing, retelling, story grammar; and (f) writing of sounds, words, and sentences.

As students acquired literacy skills, they transferred into small groups using a balanced literacy approach (i.e., small-group instruction using literature and instructional level readers, word study using groups of words with similar components such as vowels, blends, beginning sounds, etc., comprehension, and writing activities). The direct-instruction, small-group interventions and balanced literacy in the experimental schools included grouping sizes of 3 to 7 students. Primary-level reading (Tier 1) in the experimental schools included the *Open Court* curriculum.

Our comparison group (Schools 4-6) used a balanced literacy approach for primary- and secondary-level reading (Tiers 1 and 2). Instruction included the components of guided reading, and for secondary level intervention ESL pullout or ESL class placement,

including language with guided reading activities for the literacy block. In the primary-tier guided reading approach, the students read literature on their instructional level. The text is leveled in terms of sentence length, complexity, and factors such as repeatable phrasing. Text vocabulary contains many high-frequency words and is usually not controlled or decodable. Phonemic awareness and phonics instruction are provided during "teachable moments." The focus is kept on reading and re-reading leveled books with specific reading skills addressed on an "as-needed" basis.

The balanced literacy approach occurred typically in larger groups (12 or more students), and consisted of several common features, including word study, group reading of stories, and writing activities. Writing activities were emphasized more in some classrooms than in others. ESL pullout and ESL class groupings implemented a balanced literacy approach for secondary-level reading instruction. Teachers frequently worked on language and vocabulary. And again, within the balanced literacy approach, selected materials were dependent on teacher choice and based on student need. Secondary-intervention student groupings in the comparison schools included groups of 5-12 or more.

Measures

Two primary measures of early literacy skills were used, the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) as a repeated measure and the Woodcock Reading Mastery Test on a pre- and post-basis. The DIBELS (Good, Simmons, & Smith, 1998; Kaminski & Good, 1998) is designed to measure performance on early literacy skills before children begin to read and during early instruction. DIBELS serves two functions: (a) to identify children who are not acquiring early literacy skills and (b) to monitor progress due to reading interventions/curriculum.

Good and colleagues have implemented the DIBELS instrument on a national scale in primary grades and have used the data to propose "benchmarks" for student performance across skills to indicate a satisfactory level of progress (<http://dibels.uoregon.edu/>). *Benchmark status* indicates the student is on target for meeting grade-level proficiency in a skill, *strategic risk status* means the student is falling behind and needs additional instruction to reach benchmark, and *intensive risk status* means the student is far behind expected performance and needs consistent small-group remedial instruction to catch up to the benchmark level. For purposes of the current study, two subtests were used, the Nonsense Word Fluency (NWF) and Oral Reading Fluency (ORF). These data were collected fall, winter, and spring each year, and served as a primary indicator of "response to intervention" for all students. Of the

283 students with first-grade data through the spring, 135 were English-only and 148 ELL. Slightly more students had data available in second grade with a total of 294 students, 137 English-only and 157 ELL students.

The Woodcock Reading Mastery Test (Woodcock, 1991) is a norm-referenced reading assessment commonly used in research studies. The subtests used in this study included the Word Attack, Word Identification, and Passage Comprehension subtests. The Woodcock was administered to a subset of the students in the sample on a pre- and post-basis. Analyses of Woodcock data were only conducted for the ELL students in the intervention groups. Of these 144 students, 88 had Woodcock data for the spring of first grade, and 55 had Woodcock data available for the spring of second grade.

Fidelity of intervention. In addition to measures of student performance, we also used procedural fidelity measures to determine the levels of implementation during interventions across the participating schools. Fidelity ratings consisted of checklists with questions regarding (a) use of procedures as outlined in the curriculum guide (e.g., followed reading script, included lesson components as outlined); (b) instructional features such as modeling, error correction, guided feedback, and appropriate pacing; (c) instruction of key early literacy skills within lessons (e.g., letter-sound correspondence, blending sounds, sight word practice, oral reading with fluency practice, comprehension checks); and (d) management features such as use of appropriate praise to reprimand ratios, smooth transitions between tasks, and effective management of disruptive behaviors. The fidelity instruments included 20-24 items and used a scoring system of Yes, Sometimes, or No for each item; or a rating of 0, 1, and 2. Fidelity was collected by research staff two to three times per year for teachers in each school.

Findings indicated that school personnel, including teachers and paraprofessionals, were able to effectively implement the secondary-level curricula with a direct instruction component. This was true across schools with mean fidelity scores of 82-97% for School 1 (34 probes); 87-98% for School 2 (36 probes); and 88% for School 3 (9 probes). Fewer probes were collected in comparison schools (31 total) with mean ratings of 13-84%.

Experimental Design

A quasi-experimental design was used with an experimental-control group comparison. Data were analyzed based on experimental and comparison group assignment. Nested groups within this design consisted of (a) students based on the type of secondary-level reading intervention received, and (b) ELL versus English-only

students; the nested groups were the focus of this analysis.

Thus, we were especially interested in the differential effects across types of secondary-level interventions for students who were ELL and at risk of reading failure. Comparisons were made for (a) direct instruction interventions (i.e., *Early Interventions in Reading, Read Well, Reading Mastery*) and *Read Naturally*, inclusive of balanced literacy intervention following direct instruction intervention ($N = 16$ who were in direct instruction groups in first grade and moved to balanced literacy in second grade), and (b) ESL pullout and ESL class groupings using balanced literacy instruction. Students were included as receiving "secondary-level intervention" if enrolled in the intervention in first, second, or both grades. Further, in order to be a participant in the secondary intervention, and thus included in the data analysis, a student had to be determined as "at risk" for reading failure based on DIBELS screening in the fall of first and/or second grade. Data are also presented for students in the sample (enrolled in the experimental and comparison schools) who received primary-level instruction only, generally students who were not at risk for reading failures based on DIBELS screening (see Table 1 for a breakdown of groups).

Statistical Procedures

To address the research hypotheses, several statistical methods were employed. For the first hypothesis (main effect for experimental and comparison group students – all ELL and English students in the schools), the following statistical analyses were conducted: repeated-measures ANOVA by groups for (a) the first grade, Nonsense Word Fluency (NWF) and (b) the second grade, Oral Reading Fluency (ORF) on DIBELS.

To address the second hypothesis (comparison of progress of ELL to English-only students enrolled in the secondary interventions), a repeated-measures ANOVA by experimental groups and language was conducted, and group means were visually compared for students based on (a) primary language (English and ELL), (b) experimental versus comparison group, and (c) intervention type (i.e., direct instruction versus ESL/balanced literacy).

To address the third research hypothesis (comparison of ELL students by intervention type), an ANOVA was conducted for ELL students for their slope or rate of growth as suggested in prior RTI studies (Fuchs & Fuchs, 2006), for first-grade NWF and second-grade ORF. An ANOVA test was conducted for the Woodcock Reading Mastery test, mean standard scores for three subtests, with comparisons for the ELL students enrolled in two groups (a) direct instruction (first and/or second) and (b) ESL/balanced literacy (first and/or second).

Figure 1. Nonsense word fluency and oral reading fluency for all ELL and English-only students in experimental and comparison groups.

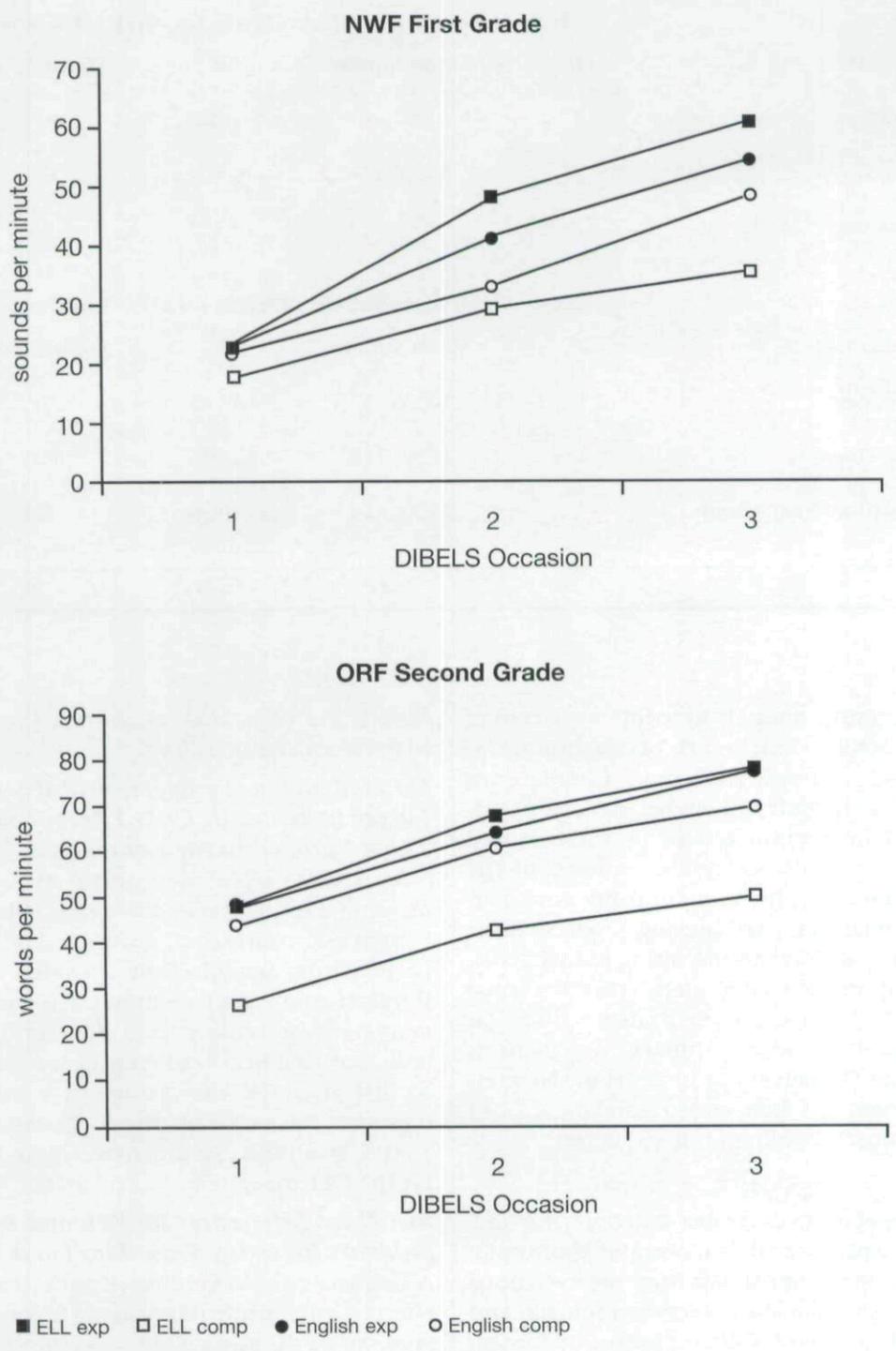


Table 2

Repeated-Measures ANOVA Results for Experimental Group and Language Group

Tests of Between-Subjects Effects for NWF 1st Grade				
Source	<i>df</i>	Mean Square	<i>F</i>	Significance
Language	1	296.087	.227	<i>ns</i>
Exp Group	1	14060.444	10.800	.001
Language * Exp Group	1	4068.399	3.125	<i>ns</i>
Tests of Between-Subjects Effects for ORF 2nd Grade				
Source	<i>df</i>	Mean Square	<i>F</i>	Significance
Language	1	10296.753	4.515	.035
Exp Group	1	28242.912	12.385	.001
Language * Exp Group	1	11762.814	5.158	.024

To address the fourth research hypothesis (percent of ELL students reaching benchmark or responding to intervention), two methods were used. Comparisons were made for ELL students only based on their participation in direct instruction groups or ESL/balanced literacy groups. Calculations were completed of the percent of students in the interventions who performed at benchmark or were making progress using the DIBELS subtests of NWF in the spring of first grade, and ORF in the spring of second grade. This was based on scores considered in the high strategic group (at 75% of benchmark) or at benchmark. Calculations were completed on the percent of students in the interventions who scored at a grade-based standard score of 85+ on the Woodcock Reading Mastery subtests.

RESULTS

Overall, results indicated greater outcomes for ELL students in the experimental schools, and specifically those participating in secondary-tier interventions using curricula with a direct instruction approach and delivered in small groups. Results are presented for students' progress on NWF and ORF on the DIBELS assessments and for the Woodcock Reading Mastery test.

Results are organized to address the stated research hypotheses and questions.

Do Students in the Experimental Schools Show Larger Increases in Early Literacy Skills than Those Enrolled in the Comparison Group?

An ANOVA repeated-measures test was conducted to determine if there were differences between the experimental and comparison groups. All students at the six participating schools were included in the analysis, those in primary intervention only and those in primary- and secondary-level intervention. The results indicated significant differences for the NWF measure in first grade for the change over time between the experimental and comparison school groups (*df* = 2, *F* = 16.017, *p* = .000). No differences were noted, however, for the ORF measure in second grade.

Are There Differences for ELL and English-Only Students Receiving Secondary-Level Interventions?

This analysis was conducted to determine differential effects for the students receiving secondary-level interventions in the schools, and specifically to see how the ELL students compared to English-only students. A second ANOVA repeated-measures test was conducted,

Table 3

Woodcock Reading Mastery Mean Standard Scores by Curriculum for ELL Students

Spring Woodcock Scores	Direct Instruction Mean	ESL/Balanced Literacy Mean
First-Grade Word Attack Grade-Based Std. Score	110.6 (8.34)	76.8 (19.07)
First-Grade Word ID Grade-Based Std. Score	105.4 (7.77)	81.3 (19.0)
Second-Grade Word ID Grade-Based Std. Score	101.3 (9.24)	82.1 (11.12)
First-Grade Passage Comp Grade-Based Std. Score	92.6 (10.67)	77.7 (17.88)
Second-Grade Passage Comp Grade-Based Std. Score	95.8 (6.36)	76.8 (14.71)

Note. First-grade direct instruction: N = 66; ESL/balanced literacy: N = 22; second-grade direct instruction: N = 32; ESL/balanced literacy: N = 23. The numbers in parentheses are the standard deviations.

Woodcock Reading Mastery ANOVA for Standard Scores

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
First-Grade Word Attack	Between Groups	18887.458	1	18887.458	133.583	0.000
	Within Groups	12159.621	86	141.391		
	Total	31047.080	87			
First-Grade Word ID	Between Groups	9588.186	1	9588.186	71.635	0.000
	Within Groups	11510.894	86	133.848		
	Total	21099.080	87			
Second-Grade Word ID	Between Groups	4907.832	1	4907.832	48.483	0.000
	Within Groups	5365.077	53	101.228		
	Total	10272.909	54			
First-Grade Passage Comprehension	Between Groups	3660.186	1	3660.186	22.317	0.000
	Within Groups	14104.894	86	164.010		
	Total	17765.080	87			
Second-Grade Passage Comprehension	Between Groups	4792.223	1	4792.223	42.238	0.000
	Within Groups	6013.304	53	113.459		
	Total	10805.527	54			

and between subject-factors were analyzed: (a) ELL versus English-only, and (b) experimental versus comparison group. These data are presented in Figure 1 and Table 2.

For NWF, significant differences were found between experimental groups ($df, 1; F = 10.800, p = .001$), but not between the ELL and English-only students by group condition. The repeated-measures ANOVA data are presented in Table 2. NWF means from fall to spring for the

ELL experimental group were 22.7, 47.8, and 60.5; and for the English-only experimental group, 22.9, 41.0, and 54.5. For the comparison group, the ELL group means were 17.5, 29.2, and 35.2; and English-only 22.1, 32.9, and 48.7. Effect sizes using Cohen's d formula (experimental group mean minus the comparison group mean divided by the square root of the mean squared error) for the overall group were .46, and .70 for the ELL group.

Table 4
Mean Slope Outcomes for NWF and ORF by Intervention for First-Grade ELL Students

	Direct Instruction Mean (SD)	Balanced Literacy Mean (SD)	ESL/Balanced Literacy Mean (SD)
NWF Slope 1st	19.7 (10.9)	12.0 (10.1)	7.4 (7.8)
ORF Slope 1st	15.4 (4.9)	9.9 (3.3)	7.5 (6.9)

Note. Direct instruction: $N = 80$; Balanced literacy: $N = 3$; ESL/balanced literacy: $N = 24$; Fifteen 1st graders received no intervention during the 1st-grade year.

ANOVA, Pairwise Comparisons for First-Grade Slope

		Sum of Squares	df	Mean Square	F	Sig.
NWF First-Grade Slope	Between Groups	3700.814	3	1233.605	12.462	0.000
	Within Groups	11680.645	118	98.989		
	Total	15381.459	121			
ORF First-Grade Slope	Between Groups	1217.443	3	405.814	14.648	0.000
	Within Groups	3269.031	118	27.704		
	Total	4486.474	121			

Post-Hoc Test – Multiple Comparisons – Tukey HSD

		Mean Difference
NWF First-Grade Slope	Direct Instruction	Balanced Literacy 7.669
		ESL/Balanced Literacy 12.315
ORF First-Grade Slope	Direct Instruction	Balanced Literacy 5.576
		ESL/Balanced Literacy 7.963

For ORF, differences were found between experimental groups ($df, 1; F = 12.385; p = .001$), and between the ELL and English-only students ($df, 1; F = 5.158; p = .024$). Pairwise comparisons showed the differences were attributed to differences between the English-only comparison group students (mean overall ORF, 58.3) and the ELL comparison group students (mean overall ORF, 39.8); rather than for the experimental group (overall means of 63.6, English and 64.2, ELL). Effect sizes were .38 overall, and .58 for the ELL group.

Are There Differences for ELL Students Based on Curriculum Used in Secondary-Tier Interventions?

Important to the study was analysis of the progress for the ELL students based on their participation in the specific secondary-tier interventions. Some of the students in the comparison schools received small-group instruction that closely resembled the experimental direct instruction groups. Thus, to address this question, the repeated-measures ANOVA using DIBELS NWF (first grade) and ORF (second grade) also compared mean differences for students by type of secondary-level interventions (direct instruction versus ESL/balanced literacy), regardless of experimental group (experimental versus comparison school).

This follow-up analysis mirrored the results presented in Table 2 and Figure 1. Significant differences were found between the groups for NWF based on intervention type ($df, 1, F = 19.564, p = .000$). The direct instruction means over time (23.0, 48.4, 60.9, respectively, from fall to spring), were larger than for students in the ESL/balanced literacy group (13.8, 24.7, 29.1).

Similar patterns were noted for the ORF, with significant differences based on intervention type ($df, 1, F = 45.642, p = .000$). The direct instruction means over time (47.2, 67.9, 78.4, respectively, from fall to spring) were again larger than for the ESL/balanced literacy group (18.3, 32.9, 38.9). The direct instruction group scored higher at the start of second grade, reflecting gains from first grade for many students. Effect sizes were robust at .879 for NWF, and .947 for ORF using Cohen's d formula.

Woodcock Reading Mastery. Table 3 presents data for the spring Woodcock Reading Mastery standard scores across first and second grades for ELL students. ANOVA tests were conducted for standard scores for the spring data for first and second grades. Significant mean differences were indicated between the direct instruction group and the ESL/balanced literacy groups. Word Attack mean standard scores were larger in the spring of first grade at 110.6 for the direct instruction group, compared to the ESL/balanced literacy group at 76.8. These differences were significant ($df = 1, F = 133.583, p = .000$). Word Identification mean standard

scores at both first (105.4, 81.3, respectively) and second grade (101.3, 82.1, respectively) also favored the direct instruction group (see Table 3); again significant, for first grade ($df = 1, F = 71.635, p = .000$) and second grade ($df = 1, F = 48.483, p = .000$). Scores on the Passage Comprehension subtest, similar to the other subtests, significantly favored the direct instruction group over the ESL/balanced literacy group for standard scores in the spring of first grade with means of 92.6 and 77.7, respectively ($df = 1, F = 22.317, p = .000$), and second grade with means of 95.8 and 76.8, respectively ($df = 1, F = 42.238, p = .000$).

Effects sizes using Cohen's d formula (experimental mean minus the comparison mean divided by the pooled standard deviation) were computed for the Woodcock subtests. Effect sizes were large for Word Attack first grade, 1.78; Word Identification (ID) first grade, 1.54; Word ID second Grade, 1.39; Passage Comprehension first grade, 1.04; and Passage Comprehension second grade, 1.35.

Were the Slopes (Rates of Progress) Different for ELL Students Based on Secondary-Level Curriculum?

Table 4 presents the mean slopes for ELL students, indicating the rate of growth as an indicator of progress for intervention in first and second grades. The mean slopes for both NWF and ORF were steeper for ELL first graders in direct instruction interventions (e.g., *Reading Mastery, Early Interventions in Reading*) compared to students in the ESL/balanced literacy intervention. The mean NWF slope for the students in this group was 19.7 during first grade compared to the small number of students in balanced literacy programs (slope = 12.0) and the ESL/balanced literacy group (slope = 7.4). The ORF slopes followed a similar pattern, with mean slopes at 15.4, 9.9, and 7.5, respectively, across groups (see Table 4, top panel). Significant differences were found for both NWF slope ($df, 3; F = 12.462; p = .000$) and the ORF slope ($df, 3, F = 14.648; p = .000$) for the participants during first grade. Pairwise comparisons showed the significant differences were noted for students in the direct instruction as compared to the ESL/balanced literacy groups (see Table 4, bottom panel).

Table 5 shows the data for ELL students based on their second-grade interventions. Few differences were noted for the mean slope for the students in direct instruction secondary interventions (mean ORF slope = 14.98) compared to those in the balanced literacy group (mean ORF slope = 16.21). It is important to note, however, that 16 of the 19 students enrolled in the balanced literacy interventions in second grade participated in direct instruction reading interventions in first grade. Students in the ESL/balanced literacy group,

Table 5

Mean Slope Outcomes for ORF by Intervention for Second-Grade ELL Students

	Direct Instruction Mean (SD)	Balanced Literacy Mean (SD)	ESL/Balanced Literacy Mean (SD)
ORF Slope	14.98	16.21	10.35
Second Grade	(7.04)	(7.11)	(9.52)

Note. Direct instruction: $N = 53$; Balanced literacy: $N = 19$; ESL/balanced literacy: $N = 27$; 25 students did not receive intervention during the 2nd grade.

ANOVA, Pairwise Comparisons for Second-Grade Slope

		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
ORF Slope	Between Groups	503.421	3	167.807	3.007	0.033
Second Grade	Within Groups	6696.046	120	55.800		
	Total	7199.468	123			

Post-Hoc Test – Multiple Comparisons – Tukey HSD

		Mean Difference
ORF Slope	Direct Instruction	-1.229
Second Grade	Balanced Literacy ESL/Balanced Literacy	4.629

Note. The majority of ELL students in balanced literacy interventions in 2nd grade were enrolled in direct instructions in 1st grade.

however, performed at a slower rate of progress, with lower slopes (mean slope = 10.35), compared to the other groups. Between-group differences in slope were significant ($df, 3, F = 3.007, p = .033$; see middle and bottom panels of Table 5).

What Percent of ELL Students Were Considered as Responsive to Intervention?

As shown in Figure 2 (top graph), 50-60% of the ELL students in direct instruction interventions were at benchmark (or approaching benchmark) for NWF at the end of first grade based on the DIBELS subtest. For the students enrolled in ESL/balanced literacy interventions, only 17% were responding to intervention according to this measure. In addition, nearly all students in the direct instruction group were making progress to advance into the strategic group, with only 5 of the 88 students still in the intensive range com-

pared to 17 of the 24 in the ESL/balanced literacy group still in the intensive range.

Similar differences were noted on the DIBELS ORF subtests, with more than twice the percent responsive in direct instruction interventions (53%) compared to the ESL/balanced literacy group (25%), and a large discrepancy between the percent at high strategic or benchmark at the end of second grade (63% for direct instruction interventions, 6% for ESL/balanced literacy group). For oral reading, only 12 of the 88 in the direct instruction group were still at the intensive level, while 27 of 34 were at the intensive level for the ESL/balanced literacy intervention group.

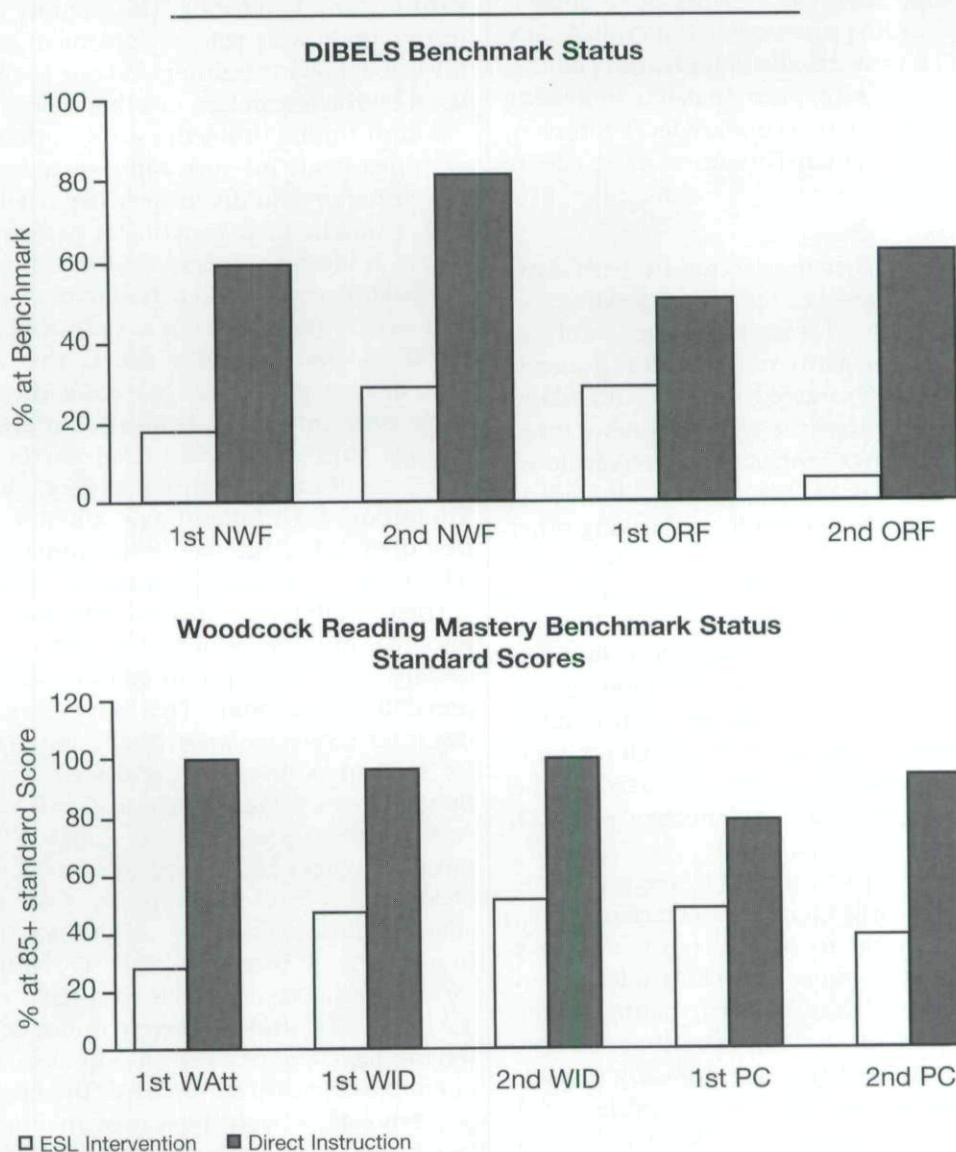
The Woodcock Reading Mastery grade-based standard scores were also used as an indicator of ELL students' level of responsiveness, similar to indicators used by other researchers (Linan-Thompson, Vaughn,

Prater, & Cirino, 2006). These scores showed higher percentages of students in the benchmark range (85+ standard score) across groups, but again differences were noted across the intervention groups in our sample. For the Word Attack subtest in the spring of first grade, 100% of students in the direct instruction group

were at a grade-based standard score of 85 or greater compared to 27% of the students in the ESL/balanced literacy group.

The same patterns were found for most of the subtests. For the Word Identification subtest in the spring of first and/or second grade, as available, students in the

Figure 2. Benchmark status for students in spring of first and second grade on DIBELS and Woodcock assessments.



NWF = nonsense word fluency; ORF = oral reading fluency; Watt = Word Attack; WID = Word Identification; PC = Passage Comprehension.

direct instruction group were nearly all within the 85+ range (98-100%), and from 45-48% were in the benchmark range for the ESL/balanced literacy group (see bottom graph, Figure 2). For Passage Comprehension, 82-97% of the direct instruction group and 39-47% of the ESL/balanced literacy group were at the benchmark standard score in the spring of first and second grades.

DISCUSSION

Findings suggest that secondary-level reading interventions were highly effective for teaching early literacy skills to first- and second-grade ELL students. A large percent of the students in the sample responded to intervention, suggesting the benefits of secondary-level, small-group reading instruction as a critical early intervention for ELL students at risk for reading failure. These findings concur with prior research indicating the benefits of small-group secondary-level interventions for ELL students (Linan-Thompson et al., 2006; Vaughn et al., in press).

Student Outcomes

The main finding was that students in secondary-level interventions improved in early literacy skills. This was true for the majority of students in our sample, as evidenced in significant gains on the DIBELS assessments for decoding (NWF) and oral reading (ORF) skills. The second finding was that the secondary-level interventions used (i.e., direct instruction interventions) were highly effective with ELL groups, including Spanish-speaking students and students speaking other languages (Somalian, Sudanese, Vietnamese). First-grade interventions that appeared especially effective included *Reading Mastery*, *Early Interventions in Reading*, and *Read Well*. A strong second-grade intervention in addition to completion of the first-grade programs for our students was *Read Naturally*. Following the initial two years in the study, it was determined that an intervention targeting oral reading fluency was needed. The *Read Naturally* curriculum was very effective with ELL students.

A third related finding was that ELL students benefited from the same early literacy interventions (i.e., direct instruction) found to be successful with the English-only students. Some of the ELL students performed as well as English-only participants on the DIBELS. This is important for administration, management, and the allocation of resources for early secondary intervention implementation in that professional development costs and materials can be shared across both at-risk groups (ELL and English-only children).

Teacher and School Outcomes and Implications for Practice

A fourth and related important finding was that

school staff in the experimental schools implemented interventions with generally high levels of fidelity (means in the 90-100%) range by the second year of the study. This is an important difference from some prior RTI studies in which researchers provided intervention, rather than personnel hired by school districts. We found, as reported by Haager and Windmueller (2001), that school staff, who included classroom teachers, reading teachers, paraprofessionals, and volunteers, could successfully implement secondary-group intervention with high fidelity. We also agree with their recommendation that successful implementation requires ongoing professional development and teacher support with student monitoring. The majority of implementers in this study were able to implement at 80% or higher fidelity, following training and one to two coaching sessions by the researchers or other school staff.

A fifth finding from the study is that some students with first-grade intervention were able to transition to less structured interventions (e.g., balanced literacy) and maintain their benchmark performance. In most cases, however, secondary-level intervention was needed for an extended period of time, throughout first and second grades, for our sample of ELL students. This could also have occurred due to the use of programs designed to provide a year-long intervention (e.g., *Early Interventions in Reading*), different than other models suggesting short-term cycles of secondary-level, small-group instruction (e.g., Vaughn, Linan-Thompson, & Hickman-Davis, 2003), with the designation of extended intervention as tertiary level or special education services (Fuchs & Fuchs, 1998).

These findings are important in planning for school resources in terms of personnel and investment in secondary level reading curriculum, particularly from a prevention standpoint. That is, investing in early reading intervention has potentially long-ranging benefits for student performance across content areas and as they progress through their academic career (Foorman et al., 1998; Torgesen et al., 2001). While additional funding sources are needed to support extended doses of secondary-level intervention, this still falls under general education services, at least for the ELL population (Mathes & Torgesen, 1998). This important finding for our sample could be due to specific school variables (i.e., most ELL students were enrolled in urban schools serving low-SES families). In addition, a high level of mobility was noted for many of the families. The sample, however, is very typical of the challenges facing larger urban school districts across the nation.

A critical finding from the study was that students enrolled in interventions described as "ESL literacy services" did not do as well as students in direct instruction. Research with ELL populations suggests that all children

regardless of primary language must acquire the same beginning reading skills (Baker & Gersten, 1997; Garcia, 2000; Gersten & Geva, 2003). This study as well as others suggests the need for more targeted reading intervention in addition to ESL intervention (Kamps & Greenwood, 2005). Further, the ESL interventions in our study typically occurred in larger groups with 12-15 students rather than 7 or fewer students as with the direct instruction interventions. In addition to the larger group size, an observed weakness to the ESL/balanced literacy intervention in our sample was the lack of systematic phonemic awareness and phonics instruction.

Limitations

Although the findings of this study provide important documentation for the use of secondary-level interventions for ELL students, they must be viewed with several limitations in mind. First, unequal group sizes were enrolled across experimental groups. In addition, few students in the comparison group were enrolled in balanced literacy reading interventions using small groups as the primary intervention. The majority of those students also received a prior direct instruction intervention. Thus, the study did not have a true control group across the grade levels, with the majority of the ELL group enrolled in an "ESL" intervention. Though the ESL classes were required to teach beginning literacy skills, a systematic, direct instruction approach was not observed specifically for literacy instruction. A further limitation was that no analysis was conducted to determine vocabulary or word study instruction across the curricula, nor were language assessments conducted to determine differences in functional language, which may have contributed to differential effects of the interventions.

In addition, the results should also be viewed with caution in that the small group sizes did not allow for control for the SES or the school variable. A final limitation is that only a subset of students received the Woodcock assessments, and resources did not allow for pre/post-data at each grade level, thus those data should be interpreted with caution.

CONCLUSIONS

In summary, the findings from this study suggest favorable outcomes for the use of small-group, secondary-tier, evidence-based interventions for ELL students. This concurs with findings of other researchers (e.g., Gunn et al., 2000; Linan-Thompson et al., 2006; Vaughn et al., in press), who have reported the effectiveness of small-group interventions for ELL students at risk for reading problems, as well as recommendations from national and task force groups focused on effective practices for culturally and linguistically

diverse children (e.g., Anderson et al., 1998; Frances, Shaywitz, Steubing, Shaywitz, & Fletcher, 1996; Gersten & Jimenez, 1998; Juel, 1988). Findings also support the use of a tiered model to provide early intervention in the primary grades to help students "catch up" to their peers before falling so far behind that academic progress is severely impaired, and to determine who the non-responders might be who need more tertiary-level intervention or special education services (Al Otaiba & Fuchs, 2006; Vaughn & Fuchs, 2003).

Key findings and recommendations include continued experimental investigations of secondary-level interventions with a focus on direct instruction and evidence-based interventions for ELL students. Further, investigations addressing specific instructional components contributing to student outcomes are needed, with a focus on the systematic selection of effective practices within ESL services. It appeared in the urban schools in our sample that there are insufficient resources available to address both language and literacy instruction, especially considering the rapidly growing ELL population in larger cities. Finally, additional study regarding non-responders and tertiary-level interventions is warranted.

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Please address correspondence to: Debra Kamps, Juniper Gardens Children's Project, 650 Minnesota Avenue, Kansas City, KS 66101; dkamps@ku.edu

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