THE EFFECTS OF THE "TEMPLATES" FOR DIRECT AND EXPLICIT SPANISH

INSTRUCTION ON ENGLISH LANGUAGE LEARNERS' READING OUTCOMES

by

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Early literacy development and mastery of reading skills are critical goals for all

students to accomplish; however, there is not yet a clear answer on how or in which

language to teach these skills to English Language Learners (ELL). Until clear evidence

on effective interventions is found, the academic achievement gap between mainstream

students and ELL students is likely to increase. This study examined the effects of the

"Templates" Spanish intervention program on the Spanish early literacy skills of

phonemic awareness and the alphabetic principle for 12 kindergarten Hispanic ELL

students enrolled in a dual immersion program. To assess the efficacy of the Spanish

intervention program, a hierarchical linear model (HLM) design combining elements of multiple baseline across subjects, single-subject design, and a regression discontinuity design was used. Results of the HLM analysis found no significant effects of the intervention in the between subjects analysis. The visual analysis of single subject designs indicated that of the 12 subjects only three appeared to exhibit a positive effect of the intervention when measures of alphabetic principle were used and only two when phonemic awareness measures were used. Students for whom the "Templates" did not appear to have a positive effect were those that were already making adequate progress while receiving the small group curriculum practice. These students' skills continued growing when they received the "Templates" intervention and while some progressed at a slower pace they may have reached a sufficient level of skills that continuing or exceeding baseline levels of growth was unlikely. Our study provides some initial indication that students who are not making adequate progress with the small group curriculum practice may potentially benefit from the use of more structured, direct, and explicit instruction with the use of the "Templates". Limitations of this study included the use of a small sample size, the short duration of the time allowed for the intervention procedures, and the restricted time to conduct phase changes from baseline to intervention would have provided a clearer indication of intervention effects.

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To my son Lamar Terrazas Rogers.

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CHAPTER I

STATEMENT OF THE PROBLEM

This study examined the effects of the "Templates" Spanish intervention program on the Spanish early literacy skills of phonemic awareness and the alphabetic principle for 12 kindergarten Hispanic ELL students enrolled in a dual immersion program. The "Templates" for Direct and Explicit Spanish Instruction (TEDESI) are an instructional approach that aims to increase effective delivery of explicit Spanish instruction in targeted reading areas, and augment basic Spanish reading skills of ELL students. This chapter provides an overview of: (a) the increasing number of ELL students with reading difficulties, (b) the importance of early intervention and prevention models to promote reading success, (c) the need for Spanish intervention programs that improve reading success, and (d) the TEDESI and how they were used in this study. The chapter concludes with a statement of the purpose of this study.

English Language Learners and Reading Difficulties

Ethnic and racial diversification in the United States is growing, particularly among school-age children. In our schools there are about 3.7 million students identified as having "limited English proficiency" and over 400 different languages spoken by this population (Kindler, 2002, as cited by Rhodes, Ochoa, & Ortiz, 2005). Spanish speakers

make up approximately 77% of the limited English proficiency (LEP) population. An LEP individual is defined by Public Law 103-382 as "someone who has difficulty speaking, reading, writing, or understanding the English language and whose difficulties may deny such individual the opportunity to learn successfully in classrooms where language instruction is in English" (as cited by Rhodes, Ochoa, & Ortiz, 2005). However, English language learners (ELL) is our preferred term to describe this population.

The Hispanic English language learner population is not only the fastest-growing student population in the U.S., but also one of the populations that present the most instructional challenges for U.S. schools (Goldenberg & Gallimore, 1995). By the year 2015, Hispanics will become the second largest group behind the non-Hispanic Whites, 21.3% vs. 59.2%, respectively (Yaden, Tom, Madrigal, Brassell, Mossa, Altamirano, & Armendariz, 2000). Thus, educators' concerns about ELL instruction have increased, particularly in regards to literacy instruction. Learning to read in a language different from the one spoken at home poses an enormous challenge to ELL students and a great dilemma for teachers regarding what is the best way to approach their reading instruction. Yet, there is a lack of knowledge on effective literacy instruction both in English and Spanish for children who are English language learners.

In the most current available report from the National Clearinghouse for English Language Acquisition (2000-2001) only 18.7% of English language learners in the U.S. scored above the state established norms for reading comprehension compared to 57.4% from the native English population. Furthermore, although the reading outcomes of English language learners in general are low, children who speak Spanish as their first

language are more likely to experience reading difficulties than children from other linguistically diverse backgrounds (August & Hakuta, 1997). This is a clear indication of our inability to create educational systems that fulfill English language learners educational needs.

The National Center of Education and Statistics (2004) reported that 31% of English language learners who speak English proficiently failed to complete high school. This number is even larger (51%) for the English language learners with limited English proficiency. It is suspected that low academic achievement among English language learners is one possible cause of high school drop outs (De la Colina et al., 2001). De la Colina and colleagues propose three possible causes of academic failure: the English language learner population may have low levels of English language proficiency; they may have difficulty with advanced Spanish language skills; and/or their parents and extended families may have little formal education (2001). English language learners who cannot read and write proficiently in English and/or who fail to acquire a high school diploma can expect challenges throughout their life. They not only lack full participation in American schools but they also lack job opportunities and earning power. Furthermore, the U.S. national potential for economic competitiveness, innovation, productivity growth, and quality of life are also affected (NLP-LMCY, 2006).

The importance of improving reading comprehension scores and English language proficiency in English language learners needs to lead professional educators to develop successful alternatives to solve these problems. We need to concentrate our efforts on prevention rather than remediation (Kame'enui, Good, & Harn, 2005). We

need to identify students that are at serious risk for becoming successful readers and writers early. We also need to develop effective teaching strategies/intervention programs that fulfill these students' needs.

<div align="center">Early Intervention and Prevention Models</div>

The skills that children develop during early kindergarten/first grade instruction have a substantial impact on their further literacy development. Children who fall behind in academic skills early in school are likely to be behind later in school (Alexander & Entwisle, 1988; Shaywitz, Escobar, Shaywitz, Fletcher, & Makuch, 1992). Statistics indicate that there is an 88% chance for a child who was a poor reader in first grade to continue being a poor reader in fourth grade (Juel, 1988). Teaching children to read in a language in which they are not yet proficient increments the risk for ELL. For this group of children, it is critical to identify those skills that are predictors of reading development and to design appropriate assessments that identify children at risk early.

In recent years, several models for the early identification and intervention for students at risk have been developed. The Outcomes Driven Model (Good, Gruba, & Kaminski, 2002), the Problem Solving Model (Deno, 1989), and Three Tier Models for primary, secondary, and tertiary prevention for academic or Response to Intervention (RTI) model (Gresham, VanDerHeyden, & Witt, 2005; Kame'enui, Good, & Harn, 2005) and behavioral problems (Horner, Sugai, Todd, & Palmer, 2005) are just some examples.

All of these models consist of a prevention-oriented decision-making process that focuses on supporting children to achieve successful academic outcomes through early intervention efforts. Prevention-oriented tasks in these models involve repeated assessments of students' basic academic skills, behavior problems, and/or social emotional needs to identify those students that are at higher risk for developing further difficulties.

Interventions based on these prevention models usually entail: (a) universal interventions, core instruction provided for all students (repeated assessments three times a year); (b) targeted interventions, "generally effective" research-based interventions specifically targeted for those students that are identified as being at higher risk for becoming readers (provided in groups of four to five students and conducting more frequent assessments to monitor students progress) and, (c) individual interventions, students who do not respond to targeted interventions will get something else or something more individualized, either from their teacher or someone else; students are repeatedly assessed (once a week generally) and those who still do not respond either qualify for a more intensive special education evaluation or for special education services (Fuchs, Mork, Morgan, & Young, 2003).

Another important characteristic of early intervention models is that they all use assessment tools that are dynamic indicators of basic academic and/or behavioral skills (or assessment that focuses on key behaviors of overall performance) to identify students at risk for academic/behavioral failure and to develop adequate interventions to solve students' problems early. Indicatores Dinámicos del Exito en la Lectura (IDEL) is a

recently developed assessment tool that has been successfully applied with an Outcomes Driven Model approach for the early identification of students at risk for difficulty becoming successful Spanish readers. However, while we have tools to identify struggling ELL readers early, effective reading instruction and intervention programs are still a need. The following section briefly describes this issue and leads us to the purpose of our study.

Statement of Problem:

Need for Spanish Intervention Programs

Teaching reading to English language learners presents several questions: what instructional elements of Spanish or English language need to be emphasized? What models for design and delivery of instruction provide better results?, and, what instructional approaches should we use, bilingual, English-only, or pair-bilingual approaches? In this section we discuss these issues in order to emphasize the significance of this study.

A first concern is that, models of effective teaching and interventions for Spanish and English literacy skills for English language learners lag behind the need. De la Colina and colleagues (2001) reported a need for bilingual teachers to have intensive, research-supported, Spanish language reading interventions. Additionally, The National Literacy Panel on Language-Minority Children and Youth (NLP-LMCY, 2006) emphasized the importance of key components of beginning reading such as phonological awareness,

phonics and word study, vocabulary, and comprehension, for Spanish reading instruction with English language learners. Such support is based on the premise that Spanish, like English, is an alphabetic language, and according to recent findings the essential features of English literacy instruction can also be applied to Spanish (Carrillo, 1994, Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Jimenez & Ortiz, 2000, Jimenez, 1994; Signorini, 1997).

A second issue is that, the NLP-LMCY (2006) stated that even though there is some indication that what works for native English speakers is also effective for English language learners (particularly direct and explicit instruction), there are too few high-quality studies to conclude this with certainty. Therefore, even though there is some evidence of the potential that direct and explicit instruction of the key components of beginning reading has for improving English language learners' bilingual reading outcomes, more research is essential.

Finally, research on bilingual education suggests that there is a positive effect of bilingual education on English language learners' English reading outcomes (Willig, 1985; Greene, 1997; Slavin & Cheung, 2004; NLP-LMCY, 2006). However, some opponents of bilingual education argue that delaying reading instruction in English is counterproductive and that English-only instruction is more effective (Gersten, 1985; Rossell & Baker, 1996). They also suggest that studies conducted on bilingual education have shown minimal effect sizes (NLP-LMCY, 2006). As the NLP-LMCY (2006) also reports, studies on bilingual education in which effects sizes were minimal are those that use Spanish interventions inefficiently or studies that have serious methodological issues.

Furthermore, the panel argues for a need to develop effective interventions that address the needs of straggling English language learners. However, the research on acquiring literacy in a second language and the research on effective intervention programs remains limited (NLP-LMCY, 2006). Full descriptions of the issues around bilingual education and appropriate instruction for English language learners are presented in the literature section of this paper.

The "Templates" for Direct and Explicit Spanish Instruction

The TEDESI were recently developed by the Western Regional Reading First Center under the coordination of Peinado, Baker, and Rogers (2006). They consist of direct and explicit instruction in the key components of reading. The "Templates" were designed to augment, not replace, core reading instruction by focusing on the effective delivery of instruction. The "Templates" are a series of lesson cards that contain specific, explicit teaching routines that teachers integrate into existing whole class and small group instruction.

Currently, there are fifteen lesson cards that focus on the following teaching skills: alphabetic knowledge, phonemic awareness, phonics, and fluency. A table of the scope and sequence of the lesson cards is provided in *Appendix B*. In this study only templates designed to teach alphabetic knowledge, phonemic awareness, and alphabetic principle skills were used. The "Templates" were integrated with the activities of the

kindergarten curriculum used by the school teacher: Alfarrimas - Hampton Brown publisher.

Specifically, the "Templates" involve both preparation steps and instructional delivery steps. The preparation steps include (a) a brief description of the task and the pre-requisite skills for the task, (b) the materials teachers need to have available for effectively delivering instruction, (c) appropriate signals and waiting time, and (d) the specific teacher wording to elicit student responses. Signaling and waiting time are considered to be key features of the "Templates" because they allow for effective pacing of a lesson, they provide a cue of when students need to respond, and they facilitate the participation of all students, avoiding the tendency for higher performing students to always answering first.

The instructional delivery steps include: (a) a brief explanation of the task prior to starting the activity; (b) teacher modeling and demonstrating the task using specific wording, signals, and wait time (e.g. "My turn"); (c) teacher leading student group practice with one or two examples using specific verbal and visual cues (e.g. "Our turn"); (d&e) providing student whole group and individual responses until knowledge is solid using appropriate signaling, monitoring, and pacing (e. g. "Your turn"); and (f) using systematic error correction procedures that follow the same model-lead-test (my turn-our turn-your turn) procedure. *Figure 1* is a description of each step of the "Templates" direct and explicit instructional model. (A model of a Spanish template is provided in *Appendix C*, and *Appendix D* provides the English version used to create the Spanish "Templates").

Figure 1

Steps in Explicit Instruction

Steps	Definition	Example	
		Teacher (does) says	Student responds
Explanation	Clearly defining the learning objective for the student	(Show student the letter a). "Today we're going to learn the sound this letter makes."	
Model	Demonstrate the skill students are learning	"My turn (touch the letter) this letter makes the sound /aaa/."	
Lead	Practice the skill with students	"Our turn, everyone, say the sound with me." (Touch the letter a) "/aaaaa/".	/aaaa/
Test	Ask students to demonstrate the skill independently	"Your turn, "what sounds does this letter make?" (Touch the letter).	/aaaa/
Delayed Test	Ask students to demonstrate the skill later in the lesson to ensure that they retained the skill	"Let's review the sound this letter makes. Everyone, what sound?"	/aaaa/

Adapted from Sanford, 2006.

Purpose of the Study

Developing effective Spanish intervention programs is crucial. Identifying the effects of direct and explicit Spanish instruction with English language learners is a main goal for this study. We hope to contribute to the development of literacy and language development theories that specifically apply to ELL and to the development of Spanish intervention programs. Specifically, this study examined the effects of the "Templates" Spanish intervention program on the Spanish early literacy skills of phonemic awareness and the alphabetic principle for 12 kindergarten Hispanic ELL students enrolled in a dual immersion program.

The proposed study addresses the instructional needs that English language learners present by increasing our understanding of effective teaching methods and instructional curriculum materials for Spanish early literacy skills. The primary research question examined in this study is:

Is there a functional and significant relationship between the use of the "Templates" for Direct and Explicit Spanish Instruction and an increase on the early literacy skills (phonemic awareness and phonic skills) of kindergarten bilingual English language learners?

CHAPTER II

LITERATURE REVIEW

This chapter reviews the literature on (a) key components of effective literacy instruction, (b) direct and explicit instruction, and (c) bilingual education and cross-linguistic transfer (*Table 1* highlights some critical elements in the literature reviewed in this section). Direct and explicit teaching strategies may be a useful methodology for introducing beginning reading skills to English language learners. In this section, "direct and explicit instruction" is defined and critical features are outlined. Finally, some of the issues surrounding bilingual education, English-only programs, and pair bilingual programs as well as important elements of cross-linguistic transfer of Spanish to English literacy skills are addressed.

Effective Literacy Instruction

Key Components of Reading Instruction

In an effort to identify, assess, and synthesize research on the education of English language learners, with regard to literacy attainment, the NLP-LMCY (2006) conducted an extensive and rigorous research review that addressed critical questions in

Table 1

Critical Elements in the Literature

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1. **Key components of effective English literacy instruction have benefits for English reading skills of English language learners (NLP-LMCY, 2006, Kame'enui, Carnine, Dixon, Simmons, & Coyne, 2002; Carnine, Silbert, & Kame'enui, 1997; Watkins & Slocum, 2004; Shaywitz, 2003).**

2. **Studies with monolingual English speakers at risk for reading difficulties have demonstrated the positive effects of direct and explicit instruction (Adams & Engelmann, 1996; Fuchs, Fuchs, Mathes, & Simmons, 1997; Juel, Minden-Cupp, 2000; Torgesen, 2000).**

3. **Bilingual education has positive effects on English reading outcomes (Willig, 1985; Greene, 1997; Slavin & Cheung, 2004; NLP-LMCY, 2006).**

4. **Cross-linguistic transfer of reading-related skills from one language to another is evident for some components of beginning reading (August et al., 2001; Cisero & Royer, 1995; Comeau et al., 1999; Da Fontoura & Siegel, 1995; Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Escamilla, 1987; Geva, Wade-Woolley, & Shany, 1997; Jiménez Gonzalez & Haro García, 1996; Kendall, Lajeunesse, Chmilar, Shapson, & Shapson, 1987; Lambert & Tucker, 1972; Ordoñez, Carlo, Snow, & McLaughlin, 2002).**

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the field. The panel reported that early reading skills were critical for later successful literacy development. Specifically, they determined that these skills could be clustered into five key components. The five components include (a) phonemic awareness, (b) phonics, (c) fluency, (d) vocabulary, and (e) reading comprehension (NLP-LMCY, 2006). Furthermore, the panel reviewed 17 studies to determine the extent to which explicit teaching of key components of English reading instruction confer a learning benefit on English language learners.

Phonemic Awareness

Phonological awareness instruction consists of teaching students to focus on and manipulate phonemes in spoken syllables and words (National Reading Panel, 1998). Reviews of the literature indicated that phonological awareness is an important skill for students to master to become successful readers (e.g. Adams, 1990; Carnine, Silbert, & Kame'enui, 1997; Hurford, Darrow, Edwards, Howerton, Mote, Schauf, & Coffey, 1993; Mann, 1993; National Reading Panel, 200). Snowling (1981) found evidence that students who are unaware of the sound structure of spoken words often have more difficulty acquiring the decoding skills that are necessary for proficient reading. Additionally, Quiroga et al. (2002) found that the same relationship exists between phonological awareness and reading in Spanish. In particular, Stuart (1999) found positive effects of phonemic awareness and phonics instruction for English language learners' reading outcomes (effect size +0.46*).

Lewkwicz's (1980) review of phonemic awareness skills identified two tasks directly related to decoding ability: (1) segmenting and (2) blending. Students must have an understanding that words can be segmented into sounds, and that sounds can be blended together to form words. For example, in a segmenting exercise, the teacher would say "the sounds in the word cat are /k/ /a/ /t/." In contrast, in a blending exercise, the teacher would say "the sounds /d/ /o/ /g/ can be put together to make the word: dog." Students (including ELL students) who do not develop this understanding early lag behind their peers in their ability to sound out and read words (Cornwall, 1992; Hurford et al., 1993; Mann, 1993).

Phonics

Phonics instruction is designed to help students learn that letters represent sounds and that those letters can be put together to form words (Carnine, Silbert, Kame'enui, & Tarver, 2004). The primary focus of phonics instruction is to help beginning readers understand how letters are linked to sounds (phonemes) to form letter-sound correspondences and spelling patterns, and to help them learn how to apply this knowledge in reading whole words (phonological recoding). Phonological recoding involves using letter sound correspondences (e.g. this letter "c" makes the sound /k/) and blending to form words (e. g. the letters c-a-t map to the sounds /k/ /a/ /t/, and can be blended together to form the word 'cat').

According to the National Reading Panel, phonics instruction should be coordinated with phonemic awareness instruction and both should be systematic, explicit

and synthetic (Carnine, Silbert, Kame'enui, & Tarver, 2004). Blachman and colleagues (1999), in a study conducted with children with low SES, found that children who receive explicit systematic phonics and phonemic awareness instruction made grater progress in reading than children who received the less explicit and systematic basal instruction. Foorman and Torgesen (2001) also found that systematic phonics instruction produces significant reading benefits for students with reading disabilities. Furthermore, Foorman et al., (1998) reported dramatic reduction in overall failure rates for children taught phonemic awareness and letter-sound correspondences using direct instruction and practice in controlled vocabulary text.

Fluency

Reading fluency instruction develops a student's ability to recognize words in connected text with little or no effort (Good, Gruba, & Kaminski, 2002). Compared to fluent readers, students that lack fluency with reading have to apply more of their cognitive resources to decoding words making it difficult for them to focus their attention on comprehension (Samuels, 1987; Sindelar, 1987). Thus, fluency becomes a facilitator for reading comprehension. Thompson, Vaughn, Hickman-Davis, and Kouzekanani (2003) concluded that "improved fluency and automatic word recognition allow students to focus on understanding and analyzing the content of the text" (p. 222). De la Colina and colleagues (2001) found evidence that fluency instruction was effective for first grade English language learners who (after a 12 week intervention) improved an average

of 32 words correct per minute (WCPM) and second grade students who improved an average of 37 WCPM.

The National Reading Panel (2000) reported three major findings on fluency instruction: (1) classroom practices that include repeated oral reading with feedback and guidance lead to improvements in reading for good readers, as well as those who are experiencing difficulties; (2) guided, repeated oral-reading procedures that improve reading fluency also have a positive impact on word recognition and comprehension; and, (3) fluency can be improved by having students read and reread text a certain number of times until desired levels of speed and accuracy are reached (as cited in Carnine, Silbert, Kame'enui, & Tarver, 2004). Silent independent reading however, was not found to improve reading fluency and overall reading achievement.

Vocabulary and Reading Comprehension

Vocabulary and Comprehension are the last components of English instruction. According to Baumann and Kame'enui (1991), vocabulary instruction should include definitional and contextual information about each word's meaning in addition to multiple exposures to meaningful information about words. Students with limited vocabulary have difficulty with reading and comprehension; thus vocabulary knowledge is necessary for reading comprehension (Thompson, Vaughn, Hickman-Davis, & Kouzekanani, 2003). The National Reading Panel (2000) found that exposure to reading was the most effective means for vocabulary development. The panel also indicated that explicit and systematic instruction in vocabulary was the best mode for teaching students

who were disadvantaged in their exposure to complex vocabulary. Perez (1981) and Carlo et al. (2004) found that vocabulary instruction for English language learners yielded findings consistent with those of vocabulary studies done with native speakers.

Reading comprehension reflects a students' mastery of all of the skills listed above and should be a focus of all reading programs. Reading comprehension instruction utilizes strategies before, during, and after reading text, including: activation of prior knowledge, monitoring understanding, self-questioning, distinguishing between the main idea and supporting details, and writing summaries (Baker & Brown, 1984). Carnine et al. (2004) reported that studies conducted across the last 30 years suggest that inadequate time and attention to comprehension instruction has contributed to the poor state of reading comprehension among students and that more research is needed in this area. This is also true for English language learners; the few studies conducted in the area of ELL reading comprehension have not provided sufficient evidence to determine the best way to facilitate reading comprehension for this population (NLP-LMCY, 2006)

Direct and Explicit Instruction Components

Direct and explicit instruction is a systematic approach that includes a set of *design and delivery strategies* to teach subject matter efficiently so that all the students learn all the material in the minimum amount of time (Watkins & Slocum, 2004). This approach to teaching is teacher-directed and skills-oriented, and emphasizes the use of

small-group, face-to-face instruction of carefully articulated lessons that are sequenced deliberately, and taught explicitly (Carnine, Silbert, Kame'enui, & Tarver, 2004).

Numerous studies with monolingual English speakers at risk for reading difficulties have demonstrated the positive effects of direct and explicit instruction (Adams & Engelmann, 1996; Fuchs, Fuchs, Mathes, & Simmons, 1997; Juel, Minden-Cupp, 2000; Torgesen, 2000). Adams & Engelmann (1996) conducted a meta-analysis that yielded over 350 studies conducted on explicit instruction. In this analysis they found that the mean effect size per study using explicit instruction was more than +0.75, which confirms the substantial effect of explicit instruction. The authors consistently found research with substantial effect sizes that indicate that explicit instruction is an effective practice not only for low performing students and students in special education but for all students.

Additionally, Torgesen (2000) reviewed five studies that were designed to improve the early reading skills of students with reading disabilities. His goal was to identify what conditions needed to be in place for all students to acquire adequate reading skills. Despite Torgesen's recognition that we still have "not yet discovered the conditions that need to be in place for children with the most serious disabilities… we know that approaches featuring systematic, explicit instruction in phonemic awareness and phonetic decoding skills produce stronger reading growth in children with phonemic awareness than do those that do not teach these skills explicitly" (Torgesen, 2000, p. 63). Juel and Minden-Cupp (2000) analyzed word recognition instruction (e.g. phonics and phonemic awareness) with first grade learners for the purpose of identifying the

instructional practices that best foster learning to read words. Their results suggest that differential, explicit instruction may also be helpful in this grade.

Finally, Fuchs and colleagues (1997) studied the effectiveness of a class-wide peer tutoring program in reading for three different learner groups: low achievers with disabilities (LD), low achievers without disabilities (LP), and average achieving readers (AA). These researchers used a Peer-Assisted Learning Strategies (PALS) program in which students engaged in different reading strategies addressed by teacher-directed instruction. Their findings indicated that LD, LP, and AA students in PALS classrooms made significantly greater progress than their counterparts in no-PALS classrooms (effect sizes +0.22*, +0.55*, and +0.56*, respectively).

Kame'enui, Carnine, Dixon, Simmons, and Coyne (2002) delineate six instructional strategies for the design of all explicit instructional episodes: (a) big ideas, (b) conspicuous strategies, (c) mediated scaffolding, (d) strategic integration, (e) judicious review, and (f) primed background knowledge. The features of effective instruction are complemented by features of effective delivery. Hall (2002) delineated five instructional delivery strategies: (a) appropriate pacing, (b) adequate processing time, (c) response monitoring, (d) provide feedback, and (e) frequent student responses. In the following section is a description of each of these design and delivery strategies and how they contribute to effective instruction and student learning.

Instructional Design Strategies

Effective instructional design strategies assist in maximizing student learning. Accomplishing this goal requires paying attention to all aspects of teaching. Maximizing student learning requires that attention is paid to a wide variety of details concerning the design of effective instruction. Examples include:

Big Ideas

Big ideas are "concepts, principles, or heuristics that facilitate the most efficient and broadest acquisition of knowledge" (Kame'enui et al., 2002, p. 9). A 'Big idea' is considered as one of the "key features of high quality educational tools for English language learners" (Howell & Nolet, 2000, p. 40). This concept encompasses a wide array of skills that can be categorized under one term. In beginning reading 'big ideas' refer to a set of unifying curriculum activities necessary for successful beginning reading, for example, phonemic awareness, phonics, vocabulary, fluency, and comprehension are the five 'big ideas' of beginning reading. Principles of instructional design indicate that teaching skills within the context of 'big ideas' facilitates deeper understanding of content, and an integration of new skills.

Conspicuous Strategies and Strategic Integration

Conspicuous strategies refer to the learning process presented as an explicit sequence of teaching events that make 'big ideas' applicable. For instance, to apply a 'big

idea' of phonemic awareness a plan of action is needed for making students aware that words are made of individual sounds or phonemes. This plan of action would require multiple steps, a sequence of teaching events, and systematic teacher actions. (See *Appendix E* for an example of the sequence used in this study). Strategies are made conspicuous by the use of visual maps or models, verbal directions, and full explanations (Kame'enui et al., 2002). There is extensive empirical evidence suggesting that ELL are especially in need of conspicuous presentation of the organization of knowledge (Kame'enui et al., 2002).

Strategic integration is the "planful consideration and sequencing of instruction in ways that show the commonalities and differences between old and new knowledge" (Kame'enui et al., 2002, p. 9). Conspicuous strategies and strategic integration together create instruction that is explicit. Englemann and Carnine (1982) described the characteristics of explicit instruction used in the design of the TEDESI (See *Figure 1* Steps in Explicit Instruction presented on previous pages).

Mediated Scaffolding and Primed Background Knowledge

When teaching events are accommodated to the needs of each child, especially for the learning of new material, the new principle of mediated scaffolding has been used. Scaffolds provide the learner with personal guidance during the initial phases of learning new and difficult information. According to Kame'enui and colleagues (2002) in beginning reading, scaffolds may be provided in two ways: through teacher or peer assistance, or through the sequence and selection of specific tasks. Teachers modeling the

precise process students will need to perform, and having specific steps to follow are some examples of this. Teacher-mediated scaffolding is especially important for correcting students' errors (error correction procedures are described below).

Primed background knowledge refers to the knowledge that a student must possess in order to acquire new information. According to Kame'enui and colleagues (2002), mediated scaffolding and background knowledge together guide students' appropriate placement within their academic curriculum. These instructional strategies require the identification of students' precise skill sets. Once we know exactly which skills students have already acquired, and we know the text target skills, we can provide appropriate placement in the curriculum. For the purposes of this study, we measured mediated scaffolding and priming background knowledge through several IDEL assessment measures described in the methods section and used such information to decide appropriate placement in curriculum.

Judicious Review

Finally, the principle of applying and developing familiarity with new knowledge that is facilitated by a sequence of scheduled opportunities to learn is called judicious review. According to Kame'enui and colleagues (2002) the review must be sufficient to enable a student to perform the task without hesitation, distributed over time, cumulated and integrated into more complex task, and varied illustrating the wide applications of information.

Teachers who acknowledge the importance of these design principles are able to make thoughtful changes to the instruction of struggling students. *Figure 2* displays the essential design strategies for all explicit instructional episodes.

<center>*Instructional Delivery Strategies*</center>

"Students learn best when they are actively engaged" (Watkins & Slocum, 2004). Effective delivery of instruction was, for this reason, another important element that we considered for the design of the present study. Six main elements involve effective instructional delivery:

Figure 2

Instructional Design Strategies for Direct and Explicit Instruction (Hall, 2002).
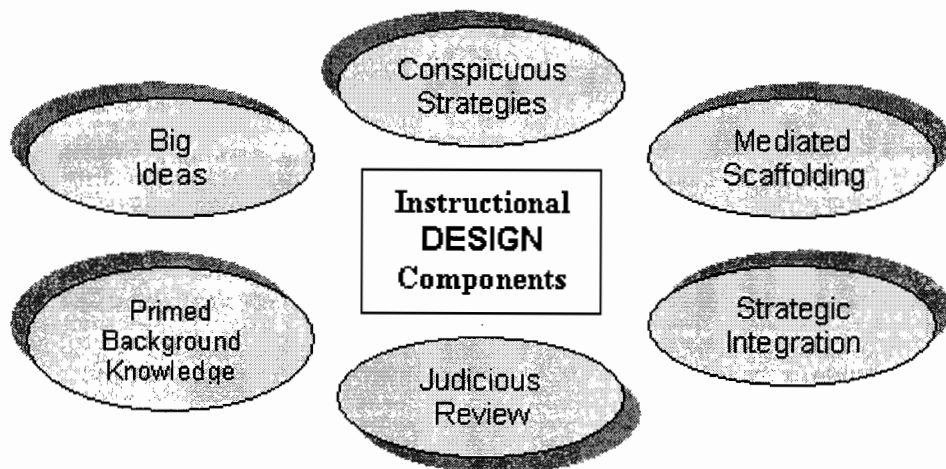
Frequent Student Responses

This involves the teacher eliciting students responses several times per minute (e.g. ask students to say, write, or do something) to keep them actively engaged, provide them with adequate practice, and help them achieve greater success. Group unison responses are also important for organizing active student engagement and responses. When students answer in unison then (a) they get high-quality practice in every item, (b) they are busy learning the material and are less likely to become distracted, and (c) teachers can easily assess the skills of all students and be well informed about their skills (Hall, 2002). In order for students to initiate a response at the same time, teachers are encouraged to use adequate signals. Auditory signals such as a snap, tap, or clap are useful because they do not require students to look away from their book; however, visual signals (e.g. pointing to a word) are often necessary. To signal a unison response teachers provide (a) a focus cue to gain student's attention to the task, (b) thinking time that vary depending on the skills of the students, (c) a verbal or visual cue followed by a pause, and (d) a signal.

Appropriate Pacing

Appropriate pacing is defined as the rate of instructional presentations and response solicitations, and is influenced by many variables such as task complexity or difficulty, relative newness of the task, and individual students' differences (Hall, 2002). According to Hall (2002), when tasks are presented at a brisk pace, there are three benefits to instruction: (a) a rapid pace allows teachers and students to cover more

material, (b) students are more engaged in the instructional activity, and (c) behavior problems are minimized (students stay on-task when instruction is appropriately paced). Even though the pace of instruction should be quick, it is also important to give students sufficient thinking time.

Adequate Processing Time

Processing time, which also refers to the thinking time, is defined as the amount of time between the moment a task is presented and the time the learner is asked to respond (Hall, 2002). This time should vary based on the difficulty of the task relative to the student (e.g. if the task is relatively new, the amount of time allocated to think and formulate a response should be greater than that of a task that is familiar and in the learners' repertoire.

Monitor Responses

Monitoring responses is a strategy necessary to ensure that all learners are mastering the skills the teacher is presenting. Watching and listening to student responses provides the teacher with key instructional information, which they use to make appropriate adjustments to instruction. Weekly assessments are also key for the design and delivery of instruction that fits each individual needs. Teaching for mastery should be one of the most important goals for a teacher to achieve. This involves performing skills at high levels; Engelmann (1999) suggest that by the end of a lesson, all students should be "virtually 100% firm on all task and activities" (p. 6).

Provide Feedback

Students should receive specific and immediate feedback for both correct and incorrect responses. In order to provide effective correction procedures, teachers must notice every error, determine the type of error that was made, provide an appropriate correction, and arrange for additional practice on items of that type. Appropriate error correction should involve stopping the student immediately following the commission of an error, demonstrate the correct answer (model), ask the student to respond to the original item (test), and give several other items, and then retest the item that was missed (retest). *Table 2* displays the steps of the error correction procedure (all the templates used in the present study integrated this error correction format).

Using the above described error correction procedure, this helps to reduce student confusion allowing them to always know when they have produced the sound incorrectly, and immediately hear the correct response. However, in addition to correcting student response errors, teachers should also correct signals errors. When signal errors occur it means that students did not answer together on signal. To correct this error, teacher might say, "I need to hear everyone together" or "Everyone should respond right at my signal" and repeat the task again (Watkins & Slocum, 2004). *Figure 3* displays the essential delivery strategies to all explicit instructional episodes

Table 2

Steps in the Error Correction Procedure (Adapted from Watkins & Slocum 2004)

Steps	Example	
	Teacher says	Student responds
1. Stop the student Immediately following error, begin correction.	My turn	
2. Model Provide correct response	This word is "eventually"	
3. Test Ask student to repeat the correct response	Your turn, what word is this?	eventually
4. Retest Teacher intersperses several other items before retesting	What word is this? (treatments) What word is this? (submarine) What word is this (eventually)	treatments submarine eventually

Figure 3

Figure 3

Instructional Delivery Strategies for Direct and Explicit Instruction (Hall, 2002)
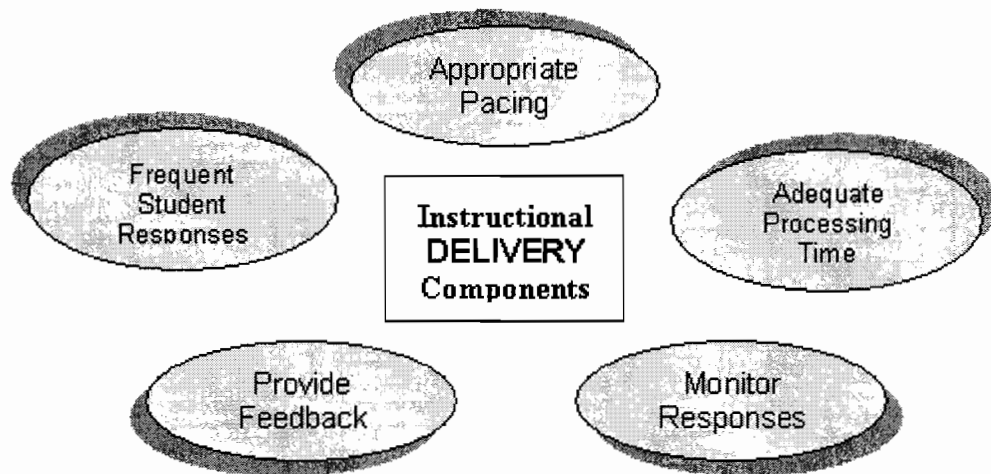
Bilingual Education

Learning to read in a language different from the one spoken at home poses an

enormous challenge to ELL students and a great dilemma for teachers regarding what is

the best way to approach their reading instruction. To assist ELL students to become

successful readers, educators debate between a bilingual instructional approach and an

English "full structured immersion" approach. Advocates of the bilingual approach argue

that schools must teach students to read in their native language first, and only when they

are proficient in that language should they be transitioned to English only reading

instruction (Cummins, 1996; Greene 1997; Krashen and Biber, 1987; Willing (1985);

Wong Fillmore, 1992). On the other hand, opponents of bilingual education believe

that English-only instruction that includes vocabulary and language development is more

effective than bilingual education (Gersten, 1985; Porter, 1990; Rossell and Baker, 1996;

Schlesingedr, 1991). A more recent approach consists of pair-bilingual instruction, in

which ELL students are taught to read in their native language and in English at different

times of the day (Calderon & Minaya-Rowe, 2003; Howard, Sugarman, & Christian,

2003; Slavin & Cheung, 2004).

A closer look to the issue of bilingual and English-only approaches could be

found on Greene's (1997) meta-analysis of the Rossell and Baker review of bilingual

education. Willing (1985) also re-analyzed a set of studies used in Baker and de Kanter

(1981) review of literature on the effectiveness of bilingual education, which had similar

results to those reported by Green in 1997, and we describe next.

Greene (1997) fully detailed the flaws on Rossell and Baker study on bilingual

education. Greene reported that of the 75 studies reviewed by Rossell and Baker only 11

studies were methodologically acceptable. Some of the studies that Rossell and Baker

included in their review are not about bilingual education; they instead compare different

native language approaches to each other, which make it difficult to make inferences

about the effects of English-only approaches. Their studies also failed to control

differences between students assigned to bilingual and English-only programs and their

claims that studies have negative or neutral results for bilingual education are

unsupported by the literature they review.

From the 11 methodologically accepted studies reviewed by Greene, results (of the combined studies) produced an "average gain for bilingual students relative to English-only students on all test scores measured in English of .18 standard deviations with a combined z-score of 2.41 (p. 8). When scores on English reading measures were analyzed separately, an average benefit of having at least some native language instruction of .21 standards deviations with a combined z-score of 2.46 was observed (all the reported results met statistical significance). Five of the previous 11 studies were also examined in a different analysis because they were the only studies where random assignment of subjects to groups was used. From this analysis Greene found a stronger positive effect size, where the combined z-score for all test scores measured in English was 2.71 (*SD* =.*26*). In the experimental studies, scores on English reading measures show an average benefit of at least some native language instruction of .41 standard deviations with a combined z-score of 3.47.

The NLP-LMCY (2006) particularly contributed to the field of bilingual education (as compared to English only instruction) through a review of 15 studies that yielded 71 effect sizes across 26 samples. Overall, the panel found that 16 of the 26 estimated effect sizes were positive, 8 were negative, and 2 were effectively 0 ($p < .05$). From these reviews the NLP-LMCY (2006) concluded that "bilingual education has a positive effect on English reading outcomes that are small to moderate in size" (p. 392).

Research on pair-bilingual instruction is limited. Slavin & Cheung (2004) found only three studies of beginning reading in which Spanish dominant students were assigned at random to be taught either in English-only or in Spanish and English

programs. In the first study, conducted by Plante (1976, as cited in Slavin & Cheung 2004) students taught in both languages performed much better on English reading test than did students taught only in English. The second (Huzar 1973, as cited in Slavin & Cheung 2004) and third (Maldonado, 1994, as cited in Slavin & Cheung 2004) studies reviewed also showed similar effects in favor of pair bilingual programs. The students that participated in this study were enrolled in a paired bilingual program where they receive 80 minutes of Spanish instruction per week compared to 200 minutes of English instruction.

<div align="center">Cross-Linguistic Transfer</div>

The underlying mechanisms of Spanish reading skills acquisition that will potentially facilitate the learning of a second language are unknown. Theories of cross-linguistic transfer such as the theory of the *Common Underlying Proficiencies* (CUP) suggest that knowledge about reading in a first language is a valuable resource for assisting in second language reading skill acquisition (Cummins, 1996). The CUP theory states that "common underlying knowledge about language lies beneath the surface of bilingual or multilingual performance" (Cummins, 1996). Applied to literacy, CUP theory implies that knowledge about reading in one language (L1) is an available resource for assisting in second language (L2) reading acquisition. The term of cross-linguistic transfer serves as the medium to the access and use of linguistic resources in L1 to the learning of other secondary languages.

Research on transfer of reading-related skills from one language to another has not been extensive. Lindsey and colleagues (2002) reported that the predominant focus of cross-linguistic transfer studies has been on phonological awareness skills (August et al., 2001; Cisero & Royer, 1995; Comeau et al., 1999; Durgunoglu, Nagy, & Hancin-Bhatt, 1993), single-word reading errors and fluency (August et al., 2001; Da Fontoura & Siegel, 1995; Geva, Wade-Woolley, & Shany, 1997; Kendall, Lajeunesse, Chmilar, Shapson, & Shapson, 1987; Lambert & Tucker, 1972), reading comprehension (Escamilla, 1987; Jiménez Gonzalez & Haro García, 1996), and vocabulary (Ordoñez, Carlo, Snow, & McLaughlin, 2002). However, most of the studies have focused on phonological awareness and word reading ability, which suggests that phonological skills are fundamental to reading acquisition across a wide variety of languages and orthographies (Lindsey, Manis, & Bailey, 2003).

Cisero and Royer (1995) tried to determine whether observed differences in young children's performance on different phonological tasks were explained by the amount of exposure to relevant Spanish phonological awareness (PA) activities. They were also interested on the progression of phonological skills in Spanish across three tasks: rhyme detection, initial phoneme detection, and final phoneme detection. Their studies reveled that students' performance was better on the rhyme task than on the initial and final phoneme task (where no differences were observed) and that the task order was not relevant. Jimenez and Garcia (1995) found that young children (instructed in Spanish) were more successful on phonological awareness task that included continuant consonant sounds vs. stop sounds, single consonant vs. consonants as part of cluster of consonant

sounds, and shorter vs. longer words. These findings are relevant because when examined as predictors of performance on similar tasks in English they seem to be correlated (Cisero & Royer, 1995).

For these reasons, we believe that English language learners are likely to benefit from Spanish instruction on the key components of beginning reading so that they could use these reading strategies when exposed to the English language instruction. The present study is designed to gather evidence on this point and contribute to the future development of a theory of the underlying mechanisms of Spanish reading skill acquisition that will facilitate the learning of a second language. This knowledge could be used to guide the development of instructional curriculum materials for the effective teaching of Spanish reading skills to bilingual learners.

Summary

Successful literacy acquisition depends on the teaching of the five big ideas of early literacy: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Effective teaching of these skills is tied to effective design and delivery of instruction. If instruction is poorly designed and delivered poorly, students may fail to learn the content being presented. Meeting the needs of diverse learners (e.g. students with different skills levels) can represent a challenge for educators. Effective instruction also means that instruction needs to be appropriate for each individual learner. Educators need to place students in the proper curriculum level by acknowledging their background knowledge

and providing mediated scaffolding. Simmons and colleagues (2002) suggest that school systems should assess all students and group them at similar skill levels to maximize instructional effectiveness for each level of student performance. In this study students were randomly assigned to the treatment group; we were particularly concerned about reducing threats to the external validity of the study (e.g. selection and treatment interaction). We further discuss this issue in the methodology section of this paper.

CHAPTER III

METHODOLOGY

A hierarchical linear modeling design combining elements of multiple baseline across subjects, single-subject design, and a regression discontinuity design was used to examine the effects of the *"Templates" for Direct and Explicit Spanish Instruction* on the Spanish reading outcomes of bilingual English language learners. Hierarchical linear modeling allowed for comparisons between baseline and intervention phases between treatment and comparison groups. Additionally, both the individual level of performance and the rate of growth were examined to (a) identify students who had made adequate growth and (b) to evaluate the effectiveness of the intervention. The single-subject multiple baseline across subjects design consisted of three tiers (four students for each tier, and two phases (baseline and intervention). Multiple baseline across subjects design allowed both within subjects and between subject comparisons at twelve different points in time. This chapter describes: (a) the setting where the study took place; (b) the characteristics, recruitment and assignment of participants to experimental conditions; (c) the data collectors and their training; (d) the measurement procedures which include a specification of the dependent and independent variables measured in this study as well as s full description of the assessment measures, interobserver agreement procedures, and

fidelity of treatment implementation procedures; and (e) the design and procedures used in this study.

Setting

The study was conducted in a moderate sized urban school district in the Pacific Northwest during the 2007-2008 school year, beginning on January 2008. The study was conducted in the students' regular classroom where they typically received reading instruction (this included a small separate group that the teacher frequently used to provide small group instruction). All students received reading instruction in small groups from personnel hired and trained by the author of the study.

Participants' Characteristics and Recruitment

Participants included 5 female students and 7 male students ($N = 12$) in a kindergarten pair-bilingual program whose primary language at home was Spanish. Students where selected for participation in the study because they were bilingual learners enrolled in the kindergarten ELL program in the available school. Of a total of 15 students who were recruited, we received parent approval for 14 students. Two students had such numerous absences that we decided to drop them from the study. However, they continued receiving the intervention on the days they were present.

After students were recruited, they were all assessed with the DIBELS and IDEL measures of phonemic awareness (Letter Naming Fluency & Phoneme Segmentation Fluency), phonics (Nonsense Word Fluency), and language fluency (Word Use Fluency). However, 90% of the students did not respond to the measures of language fluency. When students were asked to use a commonly used word in a phrase they will just repeat the word alone or did not say anything. This measure was selected for the purpose of obtaining a general idea of the language skill of students in both Spanish and English. To obtain such information we used preexisting data the school had collected at the beginning of the year from the Boehm Test of Basic Concepts in its Spanish and English form. Results of this language assessment indicated that 83% of the students were proficient in Spanish (based on their age) and 58% were proficient in English. After all initial assessments took place, three random groups of students were formed (4 to 5 students in each group). Group one was composed of 4 males and 1 female, group two had 2 females and 2 males, and group three had 2 females and 3 males.

Personnel

Three bilingual educators who had either worked for the school in the past or were currently performing some teaching activities for the recruited school were recruited to conduct the intervention phases of the study. These educators received one-on-one training on the explicit teaching of Spanish early literacy skills and the use of the templates. The training procedures consisted of: (1) A 2-hour meeting where all the

teaching materials where introduced, including templates, the daily lesson plans, and the curriculum materials. (2) One week of modeling procedures, where the author modeled the intervention procedures for the educators for the 20-minutes of the daily lessons and followed with a discussion of the relevant features of the delivery. On Day 1 we focused on reinforcement of appropriate behavior. On Day 2 we focused on signals and student unison responses. On Day 3 error correction procedures and on Day 4 we focused on making sure that we were following the daily lesson plans properly). (3) One additional week of observing the educators during instruction and providing feedback regarding the particular points that they needed to emphasize or modify. After the training took place, all trainers where encouraged to share any particular concerns. When necessary, problems were discussed and adequate solutions developed.

Two bilingual graduate students from the college of education at the University of Oregon were recruited to conduct all the assessments required in this study. Because these students were already proficient in the use of the assessment instruments, a two hour training to review the specific procedures applicable to this study was conducted on an individual basis. Random observations of the fidelity of the treatment implementation were conducted. Both graduate students were trained and obtained competency on the use of an observation form.

Measurement

Dependent Variables

The dependent variables that were examined consisted of early literacy skills in Spanish, measured with IDEL measures of phonological awareness (PA) and alphabetic principle (AP). Early literacy skills are operationally defined as the foundational skills that facilitate reading proficiency, which in this study included: a) phonological awareness or the ability to hear and manipulate sounds, and b) alphabetic principle including alphabetic understanding or the mapping of print to speech and the phonological recoding of letter strings into corresponding sounds and blending stored sounds into words. (Adams, 1990; National Reading Panel, 1998; National Research Council, 1998; Simmons & Kame'enui, 1998; as cited in Good, Gruba, & Kaminski, 2002).

IDEL measures were given to all students once a week to identify their rate of growth and level of performance across both baseline and intervention phases. In addition to the measures described above, DIBELS and IDEL measures of letter naming fluency (LNF/FNL), were given at the beginning and end of the study to compare student's level of performance in English and Spanish before and after the intervention.

DIBELS and IDEL are effective and valid measures of early English and Spanish literacy skills. Brief descriptions of Phoneme Segmentation Fluency / Fluidez en la Segmentación de Fonemas, and Letter Naming Fluency / Fluidez en el Nombramiento de las Letras measures follow:

a) Phoneme Segmentation Fluency (PSF) and Fluidez en la Segmentación de Fonemas (FSF) are measures of phonological awareness. The PSF and FSF are individually administered subtests of the DIBELS and IDEL measures. The examiner orally presents words of three to five phonemes. The student is asked to produce verbally the individual phonemes for each word. After the student responds, the examiner presents the next word, and the number of correct phonemes produced in one minute determines the final score. The numeric scale of PSF scores range from "0" to "77" with "0" meaning the complete absence of PSF skills, and "77" a well-developed FSF skill. The numeric scale of FSF scores ranges from "0" to "105" with "0" meaning the complete absence of FSF skills, and "115" a well-developed FSF skill (all numeric scales are for first grade measures).

b) Nonsense Word Fluency (NWF) and Fluidez en las Palabras sin Sentido (FPS) measure alphabetic understanding. NWF and FPS are individually-administered subtests of the DIBELS and IDEL measures that require the student to rapidly decode nonsense words that have no meaning in English and Spanish. After the student is presented with a page of printed nonsense words (e.g. "tole" and "capu") he/she is asked to say aloud the sound of each letter in the word or read the whole word. The total number of letter-sound correspondences and the number of whole words produced by the student correctly in one minute are recorded by the tester. NWF scores range from "0" to "142" letter-sound correspondences, with "0" meaning the complete absence of NWF skills, and

"142" a well-developed NWF skill. FPS scores range from "0" to "148" letter-sound correspondences, with "0" meaning the complete absence of FPS skills, and "148" a well-developed FPS skill (all numeric scales are for first grade measures).

c) Letter Naming Fluency (LNF) and Fluidez en el Nombramiento de las Letras (FNL) are an individually administered subtests of the DIBELS and IDEL measures. During this test 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. Students are told if they do not know a letter they will be told the letter. 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.

Observer Agreement for Dependent Variables

The principal investigator used both DIBELS and IDEL measures to conduct a total inter-observer agreement test in two consecutive probes for each test applied. The principal investigator worked independently with each data collector to conduct a total inter-observer agreement, which was calculated by dividing the smaller total (words, phonemes, or letter sounds correspondence) by the largest total, and multiplying it by 100%. Both data collectors obtained competency on the use of both DIBELS and IDEL measures and were in agreement with principal investigator more than 95% of the time.

Independent Variables

The independent variable that was tested was the indicated intervention which consisted of direct and explicit instruction of Spanish early literacy skills (particularly phonological awareness, and alphabetic principle skills) with the use of the *"Templates" for Direct and Explicit Spanish Instruction* designed by Peinado, Baker, & Rogers, (2006). The TEDESI logic consists of a three-step teaching process: demonstration model ("I do it"), guided practice ("We do it"), and independent practice ("You do it"). Spanish early literacy skills were introduced at two different points in time for each of the participants in the following order: PA by itself, and PA and AP combination. *Appendix E* provides the reader with a sequence of teaching events and systematic teacher actions.

Fidelity of Implementation

A check list (see *Appendix F*) for the accurate implementation of the TEDESI was developed in order to measure the intervention's implementation effects. Graduate students were trained and obtained competency on the use of this checklist before he/she conducted random observations of treatment fidelity. This checklist was designed to identify if particular aspects of the intervention were in place, including proper use of templates, correct implementation of daily lesson plans, adequate use of signals and correction procedures, and adequate pace of instruction. Additionally, this instrument gathered some information regarding student engagement through the use of a momentary interval observation procedure conducted during the 20 minute observation.

A similar instrument was design to conduct observations during the small curriculum practice that occurred during baseline (see *Appendix G*). *Appendix H* provides a description for the use of these checklists as well as the operational definitions of the observed variables.

A total of six random observations were conducted during the small group template practice. Results of these observations indicated that while two of the interventionists correctly followed the daily lesson plans, used adequate signals and corrections procedures, and had an adequate pace of instruction, the other interventionist used signals inconsistently and did not provide adequate correction procedures. This interventionist was immediately removed from his current training group and placed in the group that already had received the intervention for about 6 weeks, which could potentially explain the drop that these students displayed during the last 5 weeks they remained on the intervention. Due to limited resources we were unable to conduct enough observations of the small curriculum practice group to make any concrete conclusions about any potential differences on instruction. A total of two observations were conducted with this group, which indicated that even though they were following daily lesson plans, they were not using adequate signals and correction procedures, their pace of instruction was slower than the treatment group, and they did not seem to have clear academic and behavioral expectations.

Design and Procedures

This study employed a single-subject multiple baseline across subjects design, with three tiers (four students for each tier), and two phases (baseline and intervention). Because we had four students for each tier that participated in baseline and intervention phases at three different points in time, four replications of the design were available. Students were assigned to their treatment group at random. At Week 5, students in Tier 1 started the intervention phase and the other students in Tiers 2 and 3 remained on baseline. The students who continued on the baseline phase served as a comparison group for the students who were in the intervention phase. At Week 8 students in Tier 2 started the intervention while students in Tier 3 remained on baseline. At Week 13 all students were receiving the intervention, all in separate groups, with different teachers, and at the same time of the day.

Baseline Procedures

In this phase, the PA and AP skills of all participants were measured with the IDEL measures once a week, this included PSF, & NWF. Additional observations of the implementation of small group curriculum practice activities were conducted at random with all the groups. The duration of this phase was 5 weeks for Tier 1 (T1), 8 weeks for Tier 2 (T2), and 12 weeks for Tier 3 (T3).

During baseline all participants received typical Spanish reading instruction in their classrooms. This consisted of small group curriculum practice provided by the general education teacher and/or the instructional assistant. The structure of the small group curriculum practice consisted of daily lesson plans developed by the lead teacher to provide 20 minutes of small group structured instruction. The daily lesson plans were based on the academic goals of the current curriculum used in the students' classroom. *Appendix I* provides a sample of a three day sequence of daily lesson plans designed to provide small curriculum practice.

Intervention Procedures

After four weeks on baseline, T1 started the intervention phase, which lasted for the remaining time of the study (15 weeks). T2 started intervention four weeks later when an effect of the intervention was observed in at least one student in T1. T3 started the intervention at Week 12 of the study and received the intervention for the remaining three weeks. Intervention phase activities consisted of 20 minutes of small group template practice four days a week. Daily lesson plans were developed to provide 20 minutes of small group template practice and they were based on the curriculum that recruited schools were currently using to provide Spanish instruction; however, activities were restructured to be introduced with the use of the Spanish "Templates". *Appendix J* provides a sample of a daily lesson plan designed to provide small group template practice.

In this phase, the PA and AP skills of all participants were measured with the IDEL measures once a week just like they were conducted during baseline. Additional observations of the implementation of small group "Templates" practice activities were conducted at random with all the groups. The duration of this phase was 10 weeks for T1, 6 weeks for T2, and 3 weeks for T3.

Data Analysis

Data from this study were analyzed using both visual and statistical methods to identify whether a functional and significant relationship exists between the use of the "Templates" for Direct and Explicit Spanish Instruction and an increase on the early literacy skills of kindergarten bilingual English language learners. First, data were graphically depicted in a multiple baseline across subjects design. Four replications of a three- tier, two phases (baseline and intervention), multiple baseline across subjects design were examined. Two scores (FPS correct letter sounds, and FPS words recoded correctly) were examined for each subject. Intervention was provided in three groups with four subjects in each group. Subjects were assigned to replication based on their initial FPS score. Each replication enabled a visual analysis of change in growth across the phases (baseline vs. intervention phases) in the study on measures of phonological awareness and alphabetic understanding. Regression lines and slopes were added to the graphs to facilitate visual analysis. Second, a statistical analysis of the data was conducted using Hierarchical Linear Modeling (HLM; Raundenbush & Bryk, 2002).

Level 1 of the model was a within-subject regression discontinuity design. Level 2 of the model was a null model with no between-subjects effects modeled.

The visual methods for the analysis of single-subject data consist of horizontal and vertical analyses that are crucial to determine whether there is a functional relationship between implementation of the independent variable and increase in the dependent variable (Horner & Albin, 2005). During horizontal analyses each student's performance in baseline is compared with his/her performance during intervention. This analysis consists of analyzing changes in level, trend, and variability. Change in level refers to the average of the data within a condition and it is typically calculated as the mean. According to Kennedy (2005), attending to the level of data allows for the estimation of the central tendency of the data and for the comparison of patterns between phases.

Trend refers to the slope of the best-fit straight line that can be placed over the data within a phase. In order to interpret the effects of trend, changes in slope and magnitude must be considered (Kennedy, 2005). Slopes can be positive or negative; a positive slope is one in which the data points are increasing in value within a phase. A negative slope is just the opposite. The magnitude of a trend refers to the size or extent of the slope (e.g., a high magnitude slope is a rapidly increasing or decreasing patter in the data). In our analysis a positive slope of high magnitude during intervention phases would indicate a positive effect of the intervention; this is particularly true if a flat or negative slope has been observed during baseline. When a positive slope has been observed during baseline, a change in level only may not indicate an effective

intervention. Instead an increase in the magnitude of the slope would be a more accurate estimation of effect.

Variability in data, overlap of data points, and immediacy of the effect are also important to consider in determining whether a functional relationship exists between the variables of interest. Variability has been defined as the degree to which individual data points deviate from the overall trend. Kennedy (2005) refers to variability as being high, medium, or low. When high variability (data points scattered widely around the trend line) is observed, more data points would be required to document a consistent pattern and/or an effect. Kennedy (2005) defines overlap "as the percentage or degree to which data in adjacent phases share similar quantitative values" (p. 204). In general when data does not overlap between phases a functional relationship can be established; however, in cases when overlap is not present but a continuous similar trend is observed between phases, then trend analysis overrides the importance of overlap. This is particularly important in our data because in most cases the percent of non-overlap was low, however positive upward trend was observed in both baseline and intervention phases in some of the participants. Immediacy of effect refers as to how quickly a change in the data pattern is produced after the phase change; it can be described as rapid or slow. When a quick change in the pattern of the data is observed a rapid immediacy of effect is determined.

During vertical analyses a student's performance is compared to that of his/her peers in the same replication who were held stable in a condition as the student's condition changed. All the elements of horizontal analysis also assist in this interpretation. In a multiple baseline design we expect to identify at least three

demonstrations of the effect at three different points in time (across subjects) to establish a functional relationship between the independent and dependent variables. An effect is demonstrated if changes in the dependent variable occur only when the independent variable is introduced across subjects. By comparing changes in phases across participants, multiple baseline designs control for history and maturation as threats to the internal validity of the effect.

Furthermore, in order to aid our interpretation of data we used IDEL's kindergarten benchmark goals from middle and end of the year assessments (Benchmark scores can be found on *Appendix K*). IDEL's benchmark assessments assist with the early identification of students that are at potential risk for developing the basic skills to become proficient readers. Three different risk categories can be identified: low, some, and at risk. Also when students fully develop a basic reading skill the benchmark assessment indicates that by using the term "established"; this means that students are ready to move into the next basic reading skills. For kindergarten FPS middle of the year assessment 0-9 points indicates at risk, 10-19 indicates some risk, and 20 or above indicates low risk. For kindergarten FPS end of the year assessment, 0-29 indicates at risk, 25-34 indicates some risk, and 35 and above indicates low risk. For kindergarten FSF middle of the year assessment 0-14 points indicates at risk, 15-29 indicates some risk, and 30 or above indicates low risk. For kindergarten FSF end of the year assessment, 0-34 indicates at risk, 35-49 indicates some risk, and 50 and above indicates established.

Summary

In this chapter, we described the characteristics of the students, data collectors, and interventionist that participated in this study. We described our dependent and independent variables and we presented the features of the design and data analysis used to determine if the *"Templates" for Direct and Explicit Spanish Instruction* had a positive effect on the Spanish reading outcomes of bilingual English language learners. In the next section, we will provide evidence that suggests that the intervention had a positive effect for some but not all of the participants.

CHAPTER IV

RESULTS

The purpose of both visual and statistical analyses presented in this section is to

answer whether a functional and significant relationship exists between the use of the

"Templates" for Direct and Explicit Spanish Instruction and an increase on the early

literacy skills of kindergarten bilingual English language learners. Results for FPS and

FSF are discussed separately for both visual and statistical analysis.

Visual Analysis

Fluidez en las Palabras sin Sentido (FPS)

Results for Fluidez en las Palabras sin Sentido are presented in *Figures 4* to *7* and

Tables 3 to *6*. *Table 3* displays the means for baseline and intervention phases, the change

of means, and the percent of non-overlapping data for all students' scores on FPS

measures. Average FPS scores for baseline phase were 20 correct letter sounds per

minute, with participant averages ranging from 0 to 81 correct letter sounds per minute.

Average FPS scores for intervention phase were 35 correct letter sounds per minute, with

participant averages ranging from 7 to 112. Slope values and changes made in slope from

baseline to intervention are presented in *Table 4*.

Table 3

Means and Change in Means for Fluidez en las Palabras sin Sentido

Replication & Tier #	Names	Baseline		Intervention		Overall	
		M	Range	M	Range	Change in Means[a]	%Non Overlap[b]
R1 T1	Samuel	13	0-23	38	22-49	25	90%
R1 T2	Alfredo	9	3-16	20	7-28	11	57%
R1 T3	Ofelia	30	8-47	50	43-55	20	67%
R2 T1	Rodrigo	9	0-15	34	24-49	25	100%
R2 T2	Juan	2	0-6	10	8-14	8	100%
R2 T3	Roberto	24	12-34	32	29-36	8	34%
R3 T1	Maria	13	7-20	31	14-43	18	89%
R3 T2	Wendy	20	8-27	34	27-46	14	71%
R3 T3	Pedro	21	14-24	17	10-21	-4	67%
R4 T1	Alex	10	4-17	33	18-55	23	100%
R4 T2	Judith	56	31-81	92	75-112	35	71%
R4 T3	Dora	32	23-45	28	23-32	-5	0%
	Mean	20		35		15	

[a] Change was calculated using the formula: M (Phase 2) – M (Phase 1)

[b] Percent of Non Overlap was calculated by determining the percent of Phase 2 data points that did not overlap with the Phase 1 range

Table 4

Slopes and Change in Slopes Across Phases for Fluidez en las Palabras sin Sentido

Replication & Tier #	Names	Baseline Slopes	Intervention Slope	Change in Slope
R1 T1	Samuel	6.54	2.31	-4.23
R1 T2	Alfredo	1.76	-1.39	-3.16
R1 T3	Ofelia	3.69	-6.00	-9.69
R2 T1	Rodrigo	4.09	1.31	-2.77
R2 T2	Juan	-0.55	0.14	0.69
R2 T3	Roberto	1.62	-1.00	-2.62
R3 T1	Maria	-2.54	2.70	5.24
R3 T2	Wendy	0.39	1.82	1.43
R3 T3	Pedro	-0.37	-4.50	-4.12
R4 T1	Alex	1.04	2.51	1.46
R4 T2	Judith	6.13	5.21	-0.91
R4 T3	Dora	0.22	-9.00	-9.22
	Mean	1.84	-0.49	-2.33

Table 5

Criteria for Horizontal Analysis Met by Participants and Overall Judgment of

Intervention Effect for Fluidez en las Palabras sin Sentido

Replication & Tier #	Names	Level Change	Immediate Effect	Slope Change	% of Non Overlap	Benchmark Goal	Overall Judgment
R1 T1	Samuel	Yes	No	No	Yes	Yes	No
R1 T2	Alfredo	Yes	Yes	No	No	No	No
R1 T3	Ofelia	Yes	No	No	No	Yes	No
R2 T1	Rodrigo	Yes	Yes	No	Yes	Yes	Possible
R2 T2	Juan	No	Yes	No	Yes	No	No
R2 T3	Roberto	No	No	No	No	No	No
R3 T1	Maria	Yes	Yes	Yes	Yes	Yes	Yes
R3 T2	Wendy	Yes	No	Yes	Yes	Yes	Yes
R3 T3	Pedro	No	No	No	No	No	No
R4 T1	Alex	Yes	Yes	Yes	Yes	Yes	Yes
R4 T2	Judith	Yes	No	No	Yes	Yes	No
R4 T3	Dora	No	No	No	No	No	No

Average FPS slopes for baseline phase resulted in a 1.84 rate of growth, with

participant slope averages ranging from -2.54 to 6.54 increases. The average FPS slopes

for the intervention phase was -0.49 rate of growth, a change of -2.33 from baseline rate

of growth, with participant slope averages ranging from -9.00 to 5.21. *Table 5* displays all

the elements of the visual analysis that were used to decide whether the intervention had an effect on students' rate of acquisition of the alphabetic principle skills.

Changes in level were defined based on a change in means score equal or greater than 10 points. Of the 12 participants only 8 met this criterion including Samuel, Alfredo, Ofelia, Rodrigo, Maria, Wendy, Alex, and Judith. Immediate effects were judged based in the largest score obtained during baseline and how much this score differed from the first three data points on the intervention. We decided that an immediate effect was present when the difference between these numbers doubled the rate of growth obtained in baseline and/or the values were greater than 10 points. Based on this criterion only Alfredo, Rodrigo, Juan, Maria, and Alex demonstrated an immediate effect of the intervention.

Changes in slope that indicated a positive effect of the intervention were defined as scores greater than one point. According to this rule only 3 participants obtained a change in slope greater than one point (Maria, Wendy, and Alex). Furthermore, when looking at all replications presented in *Figures 4* to *7*, some variability of FPS data may have resulted in negative slope for some participants. Overall, 3 participants, Juan, Maria, and Pedro displayed decreasing trends on their rate of acquisition of the alphabetic principle skills during baseline. Two participants, Ofelia and Judith displayed rapid increasing trends and the other participants displayed slowly increasing trends during baseline. During intervention all students in Tier 1 and 2 displayed moderate increasing trends (one student exception); however, the four students in Tier 3 that received the

intervention at the end, displayed decreasing trends on their on their rate of acquisition of the alphabetic principle skills.

Percent of non overlapping data were judged based on Scruggs and Mastropieri (1994) criteria. They recommend greater than 70% non-overlapping data points as an indicator of an effective intervention. Seven participants met this criterion: Samuel, Rodrigo, Juan, Maria, Wendy, Alex, and Judith. Scores equal or greater than 35 correct letter sound correspondences per minute in the last data point available from intervention were the ones that met the benchmark goal. This included Samuel, Ofelia, Rodrigo, Maria, Wendy, Alex, and Judith.

Overall, of the 12 participants that received the intervention we can only say with confidence that there was likely a positive effect for Maria, Wendy, and Alex. Maria demonstrated a decreasing trend (slope = -2.54), on her rate of acquisition of the alphabetic principle skills during baseline and an increasing trend (slope = +2.70), of moderately high magnitude during intervention. A clear immediate effect was also observed and a change of level with a change of means of 18 points was documented ($M=$ 13 for baseline and $M = 31$ for intervention). According to this data the suggested intervention had a positive effect on Maria's rate of acquisition of alphabetic principle skills. Maria also exceeded the end of the year benchmark goal, obtaining a score of 43 clspm.

Wendy had a slightly increasing trend during baseline (slope = +0.39) and when the intervention started this had an immediate effect ($M= 20$ for baseline, and $M = 34$ for intervention) and a change of level with a change of means of 14 points was documented.

Wendy's rate of acquisition of alphabetic principle skills during intervention had a moderate increase (slope = +1.82). In addition, Wendy's end of the year score was 46, indicating that she exceeded the end of the year kindergarten benchmark goal as an effect of the intervention.

Data from Alex who took the intervention at the same time that Maria also indicated a demonstration of the intervention effect. Alex had a positive trend (slope = +1.04) of small magnitude during baseline, and a positive trend (slope = +2.51) of moderate magnitude during intervention. An immediate effect was clearly observed and a change of level with a change of means of 23 points (M = 10 for baseline and M = 33 for intervention). It is important to observe that when Alex completed baseline he was not making good progress toward kindergarten benchmark goals for the middle of the year assessments, placing him at some risk status for making adequate progress toward the end of the year benchmark goal of 35 clspm. When Alex received the suggested intervention he was able to exceed this goal obtaining a score of 55 clspm.

We also believe that the intervention may have had a possible effect for Rodrigo, whose progress during baseline on FPS measures was increasing steadily showing an increase of 4 nonsense words read per minute through each weekly assessment (slope = +4.09). When Rodrigo started the intervention a small immediate effect of the intervention was observed (M = 9 baseline, and M = 34 for intervention) and a change of level with a change of means of 25 points was documented. Rodrigo's progress during the intervention continued to increase steadily but at slower pace than the observed during baseline (slope = +1.31). However, it is important to observe that when Rodrigo

completed baseline, despite the progresses made there, he still was at some risk status for making adequate progress toward the end of the year benchmark goal of 35 clspm. The slope obtained in baseline could have been over-estimated as a result of low scores obtained in the initial assessments. When Rodrigo received the intervention he was able to exceed this goal obtaining a highest score of 49 clspm. His performance may represent a small positive intervention effect.

Interestingly, some students (Samuel, and Judith) for whom we concluded that the intervention did not have an effect, showed adequate progress and reached end of the year benchmark goals. However, their rate of progress during intervention was slower than the one observed at baseline. These decreases in progress could be explained by the fact that they were already making great progress during baseline and they had already met the end of the year benchmark goal when they started the intervention. Observing a growth of a faster speed is difficult in such circumstances.

Results of a vertical analysis are presented in *Table 6*, each student's performance is compared to that of his/her peers in the same replication who were held stable in a condition as the student's condition changed. Three criteria were used to make a decision of whether there was an effect of the intervention. The first criterion was the documentation of progress made by the student that was receiving the intervention (S1, Tx progress) during the first few weeks that students in Tiers 2 and 3 remained in the baseline. The second criterion was the documentation of lack of progress made by the comparison students (S2, BL progress) that remained in the baseline condition. The third criterion was an indication that the intervention had an effect on the student's rate of

acquisition of the alphabetic principle skills as presented in the horizontal analysis (refer to *Table 5*). Of the 12 comparisons for possible replications of the effect of the intervention, we were able to document only four effects at four different points in time.

Table 6

Criteria for Vertical Analysis Met by Participants and Overall Judgment of an Effect of the Intervention for Fluidez en las Palabras sin Sentido

Replication #	Comparisons	S1 *Tx* Progress	S2 *BL* Progress	*S1 Tx* Effect	Overall *Judgment*
R1	Samuel vs. Alfredo	No	No	No	No
R1	Samuel vs. Ofelia	No	Yes	No	No
R1	Alfredo vs. Ofelia	No	Yes	No	No
R2	Rodrigo vs. Juan	Yes	No	Possible	Yes
R2	Rodrigo vs. Roberto	Yes	Yes	Possible	No
R2	Juan vs. Roberto	Yes	No	No	No
R3	Maria vs. Wendy	Yes	No	Yes	Yes
R3	Maria vs. Pedro	Yes	No	Yes	Yes
R3	Wendy vs. Pedro	Yes	No	Yes	Yes
R4	Alex vs. Judith	Yes	Yes	Yes	No
R4	Alex vs. Dora	Yes	Yes	Yes	No
R4	Judith vs. Dora	Yes	No	No	No

Figure 4

1st *Replication for the Effect of "Templates" for Direct and Explicit Spanish Instruction*

on Alphabetic Principle Skills as Measured with Fluidez en las Palabras Sin Sentido
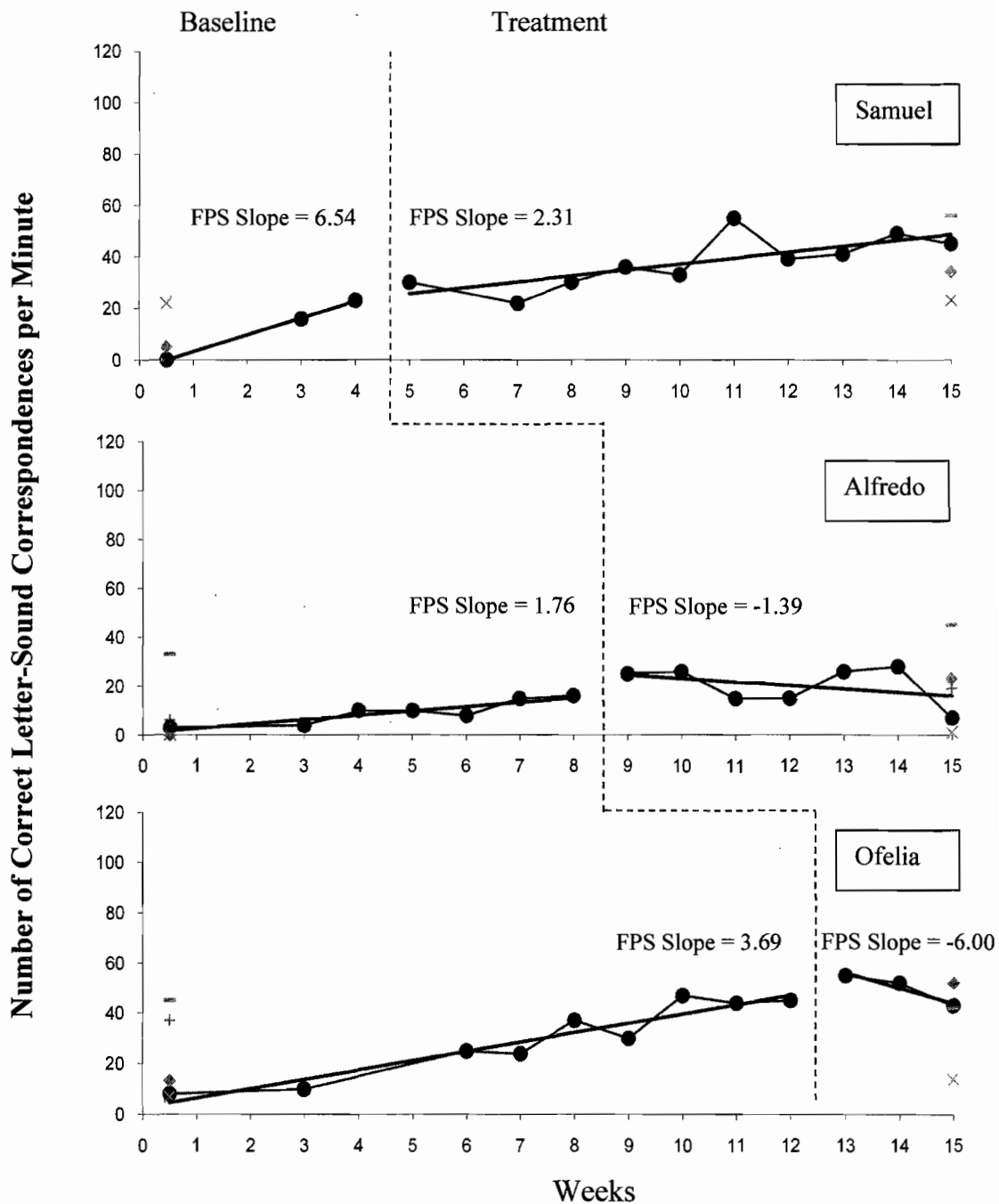
Figure 5

2ⁿᵈ Replication for the Effect of "Templates" for Direct and Explicit Spanish Instruction

on Alphabetic Principle Skills as Measured with Fluidez en las Palabras Sin Sentido
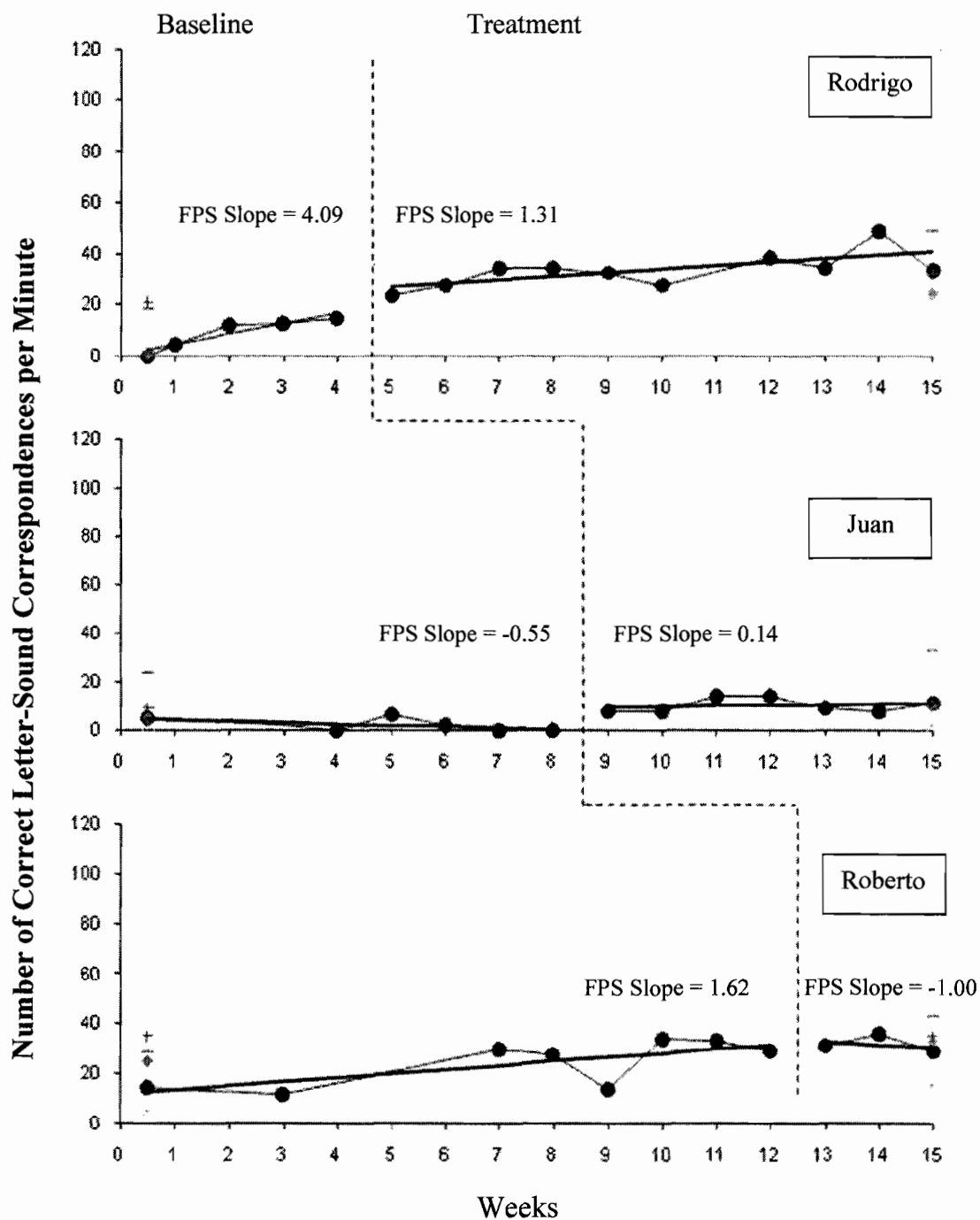
Figure 6

3rd Replication for the Effect of "Templates" for Direct and Explicit Spanish Instruction on Alphabetic Principle Skills as Measured with Fluidez en las Palabras Sin Sentido
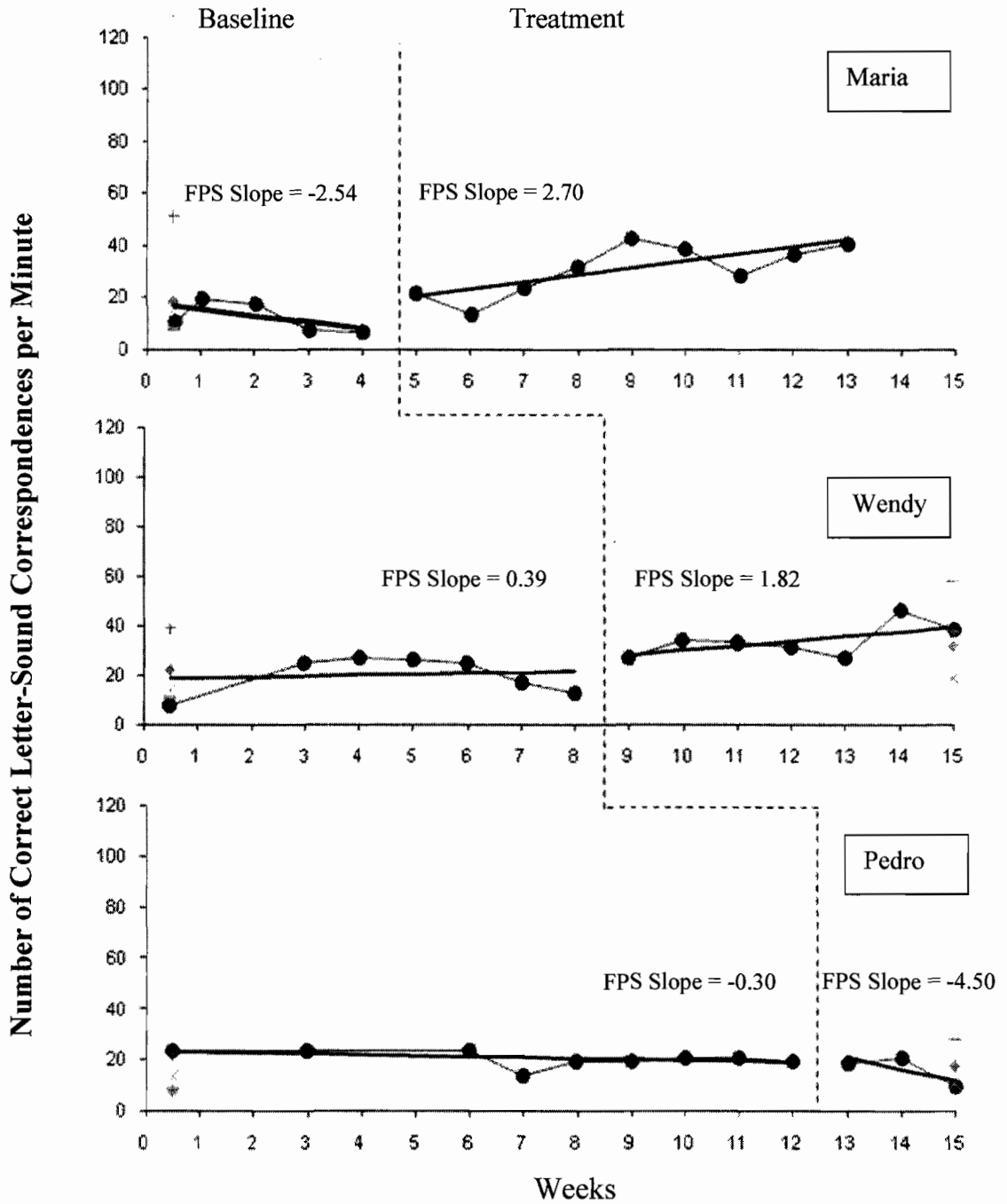
Figure 7

4th Replication for the Effect of "Templates" for Direct and Explicit Spanish Instruction on Alphabetic Principle Skills as Measured with Fluidez en las Palabras Sin Sentido
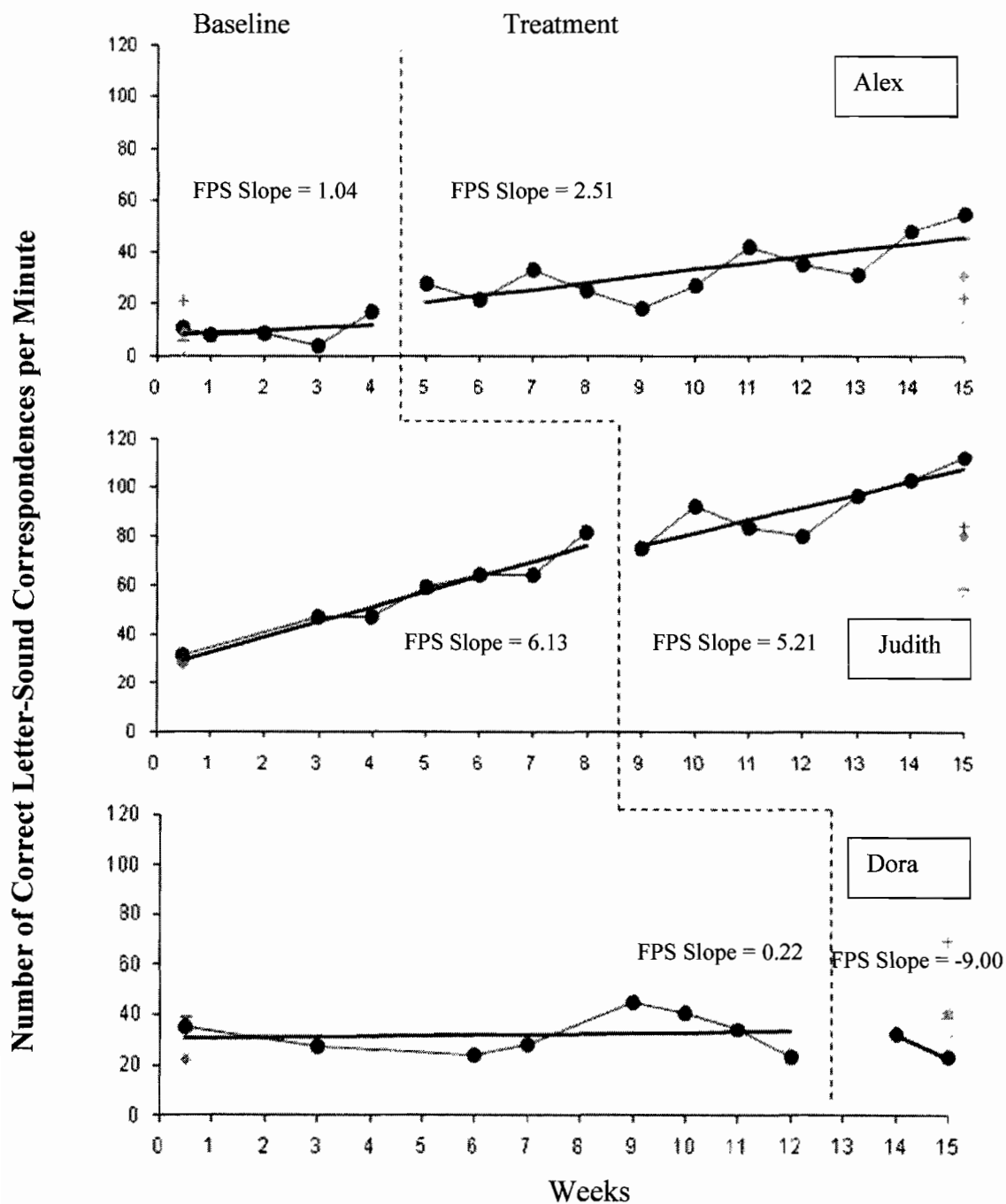
Fluidez en la Segmentación de Fonemas (FSF)

Results for Fluidez en la Segmentación de Fonemas are presented in *Figures 8* to *11* and *Tables 7* to *10*. *Table 7* displays the means for baseline and intervention phases, the change of means, and the percent of non-overlapping data for all students' scores on FSF measures.

Average FSF scores for baseline phase were 38 correct phonemes per minute, with participant averages ranging from 0 to 89 correct phonemes per minute. Average FSF scores for intervention phase were 35 correct phonemes per minute, with participant averages ranging from 16 to 104. Average FSF slopes (presented in *Table 8*) for baseline phase resulted in a 2.66 rate of growth, with participant slope averages ranging from 0.53 to 7.13 increases. Average FSF slopes for intervention phase was -3.21 rate of growth, a change of -5.87 from baseline rate of growth, with participant slope averages ranging from -32.00 to 4.73.

Table 9 displays all the elements of the visual analysis that were used to decide whether the intervention had an effect on students' rate of acquisition of the alphabetic principle skills.

Overall, of the 12 participants that received the intervention we can only say with confidence that there was likely a positive effect for Samuel and Alex. Of the 12 participants 9 had a change of level (Samuel, Alfredo, Rodrigo, Juan, Roberto, Maria, Alex, Judith, and Dora) and only 2 participants (Alfredo, and Alex) had an immediate

Table 7

Means and Change in Means for Fluidez en la Segmentación de Fonemas

Replication & Tier #	Names	Baseline		Intervention		Overall	
		M	Range	M	Range	Change in Means[a]	%Non Overlap[b]
R1 T1	Samuel	11	0-24	33	19-51	22	70%
R1 T2	Alfredo	35	0-44	59	51-67	25	100%
R1 T3	Ofelia	55	36-75	64	34-85	9	34%
R2 T1	Rodrigo	11	4-17	38	16-70	27	80%
R2 T2	Juan	24	13-37	34	19-47	10	29%
R2 T3	Roberto	43	2-63	66	60-71	23	67%
R3 T1	Maria	52	41-59	68	38-87	16	89%
R3 T2	Wendy	65	53-79	68	47-94	3	29%
R3 T3	Pedro	28	17-38	8	24-56	8	34%
R4 T1	Alex	15	8-21	36	19-61	21	91%
R4 T2	Judith	55	46-63	70	50-88	16	86%
R4 T3	Dora	67	45-89	88	72-104	22	50%
	Mean	38		35		17	

[a] Change was calculated using the formula: M (Phase 2) – M (Phase 1)

[b] Percent of Non Overlap was calculated by determining the percent of Phase 2 data points that did not overlap with the Phase 1 range

Table 8

Slopes and Change in Slopes Across Phases for Fluidez en la Segmentación de Fonemas

Replication & Tier #	Names	Baseline Slopes	Intervention Slope	Change in Slope
R1 T1	Samuel	0.53	4.73	4.19
R1 T2	Alfredo	4.36	1.82	-2.54
R1 T3	Ofelia	1.01	-19.50	-20.51
R2 T1	Rodrigo	7.13	2.74	-4.39
R2 T2	Juan	1.80	2.46	0.66
R2 T3	Roberto	4.19	-5.50	-9.69
R3 T1	Maria	2.60	1.61	-0.99
R3 T2	Wendy	2.27	-0.89	-3.16
R3 T3	Pedro	1.00	2.50	1.49
R4 T1	Alex	2.60	2.54	-0.06
R4 T2	Judith	1.74	0.92	-0.82
R4 T3	Dora	2.66	-32.00	-34.67
	Mean	2.66	-3.21	-5.87

effect of the intervention. A few more students met benchmark goals and obtained a percentage of non overlapping data higher than 70%.

During baseline Samuel made very little progress on his ability to decode phonemes (slope = +0.53). After Samuel received the intervention for a few weeks an immediate effect of the intervention was observed and a change of level with a mean

change of 22 points was documented ($M = 11$ for baseline, and $M = 33$ for intervention). Samuel's progress during the intervention (slope = +4.73) was increasing steadily and at a faster pace than the observed during baseline. Thus, the intervention had a positive effect on Samuel's ability to decode phonemes.

Table 9

Criteria for Horizontal Analysis Met by Participants and Overall Judgment of Intervention Effect for Fluidez en la Segmentación de Fonemas

Replication & Tier #	Names	Level Change	Immediate Effect	Slope Growth	% of Non Overlap	*Benchmark* Goal	Overall Judgment
R1 T1	Samuel	Yes	No	Yes	Yes	No	Yes
R1 T2	Alfredo	No	Yes	No	Yes	Yes	No
R1 T3	Ofelia	Yes	No	No	No	Yes	No
R2 T1	Rodrigo	Yes	No	No	Yes	No	No
R2 T2	Juan	Yes	No	No	No	No	No
R2 T3	Roberto	Yes	No	No	No	Yes	No
R3 T1	Maria	Yes	No	No	Yes	Yes	No
R3 T2	Wendy	No	No	No	No	Yes	No
R3 T3	Pedro	No	No	Yes	No	No	No
R4 T1	Alex	Yes	Yes	No	Yes	No	Yes
R4 T2	Judith	Yes	No	No	Yes	Yes	No
R4 T3	Dora	Yes	No	No	No	Yes	No

Alex had a positive trend (slope = +2.60) of small magnitude during baseline, and a positive trend (slope = +2.54) of the same magnitude during intervention. A large immediate effect was clearly observed and a change of level with a change of means of 21 points was documented (M =15 for baseline and M = 36 for intervention). While Alex rate of progress did not differ between phases, we would like to argue that the suggested intervention had a positive effect on Alex's ability to decode phonemes for the following reasons: a) a large change of means between baseline and intervention was documented (change on M = 21), and b) Alex achieved a change of risk status from baseline to intervention, he went from being at some risk to fully established on phonemic awareness skills.

Interestingly, some students (Alfredo, Roberto, Maria, Wendy, Judith, and Dora) for which we concluded that the intervention did not have an effect showed adequate progress and reached end of the year benchmark goals; however, their rate of progress during intervention was slower than the one observed at baseline. These decreases in progress could be explained by the fact that they were already making great progress during baseline and they had already met the end of the year benchmark goal when they started the intervention. Observing a growth of a faster speed is difficult in such circumstances.

Results of a vertical analysis are presented in *Table 10* where we compared a student's performance to that of his/her peers in the same replication who were held stable in a condition as the student's condition changed. Of the 12 possible comparisons

for possible replications of the effect of the intervention we were able to document

only one effect at one different point in time.

Table 10

Criteria for Vertical Analysis Met by Participants and Overall Judgment of an Effect of

the Intervention for Fluidez en la Segmentación de Fonemas

Replication #	Comparisons	S1 *Tx* Progress	S2 *BL* Progress	*S1 Tx* *Effect*	Overall *Judgment*
R1	Samuel vs. Alfredo	Yes	No	Yes	Yes
R1	Samuel vs. Ofelia	Yes	Yes	Yes	No
R1	Alfredo vs. Ofelia	Yes	No	No	No
R2	Rodrigo vs. Juan	Yes	No	No	No
R2	Rodrigo vs. Roberto	Yes	Yes	No	No
R2	Juan vs. Roberto	No	Yes	No	No
R3	Maria vs. Wendy	Yes	No	No	No
R3	Maria vs. Pedro	Yes	Yes	No	No
R3	Wendy vs. Pedro	No	No	No	No
R4	Alex vs. Judith	No	Yes	Yes	No
R4	Alex vs. Dora	No	Yes	Yes	No
R4	Judith vs. Dora	Yes	No	No	No

Figure 8

1st *Replication for the Effect of "Templates" for Direct and Explicit Spanish Instruction*

on Phonemic Awareness Skills as Measured with Fluidez en las Segmentación de
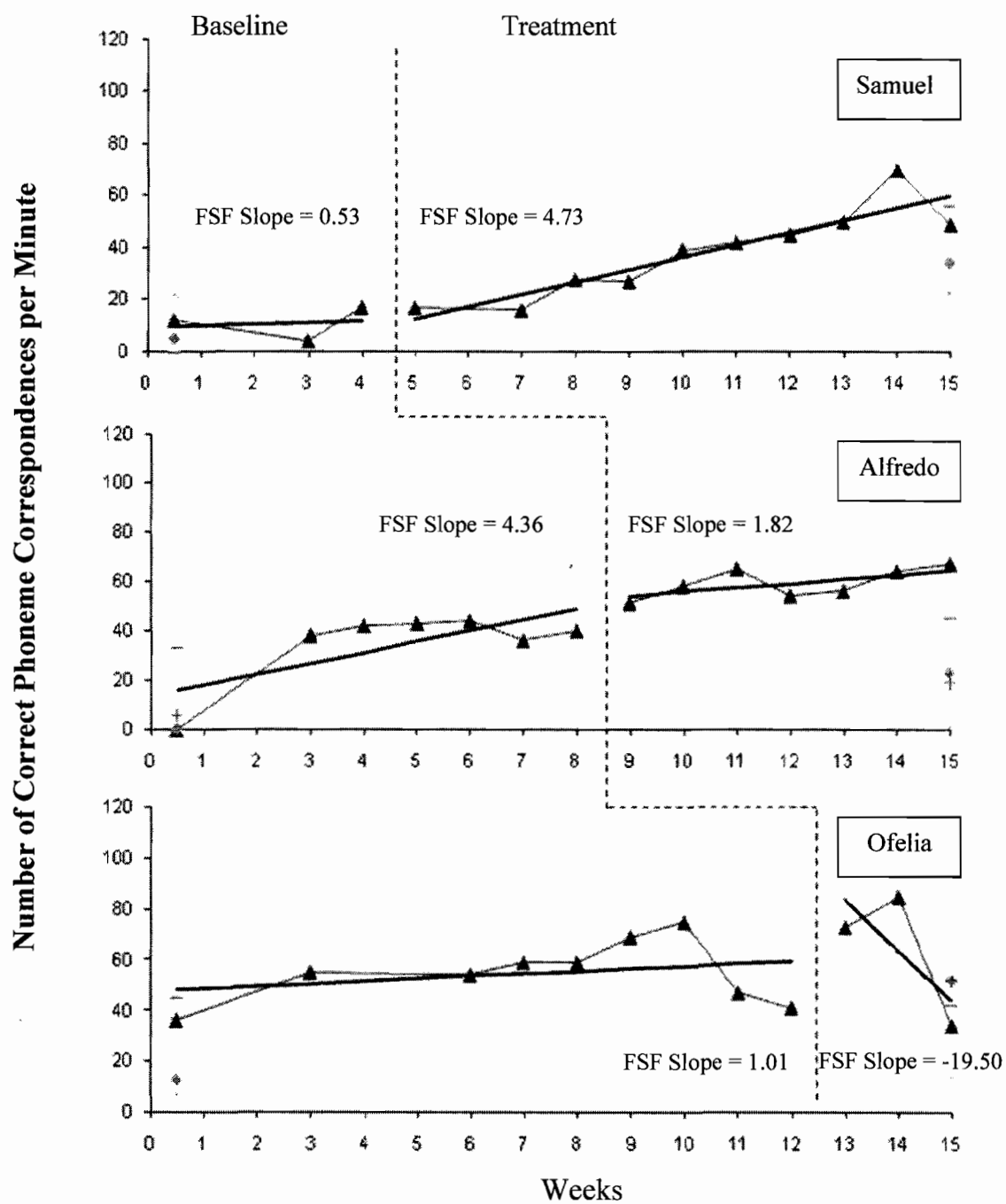
Fonemas

Figure 9

2nd Replication for the Effect of "Templates" for Direct and Explicit Spanish Instruction on Phonemic Awareness Skills as Measured with Fluidez en las Segmentación de Fonemas
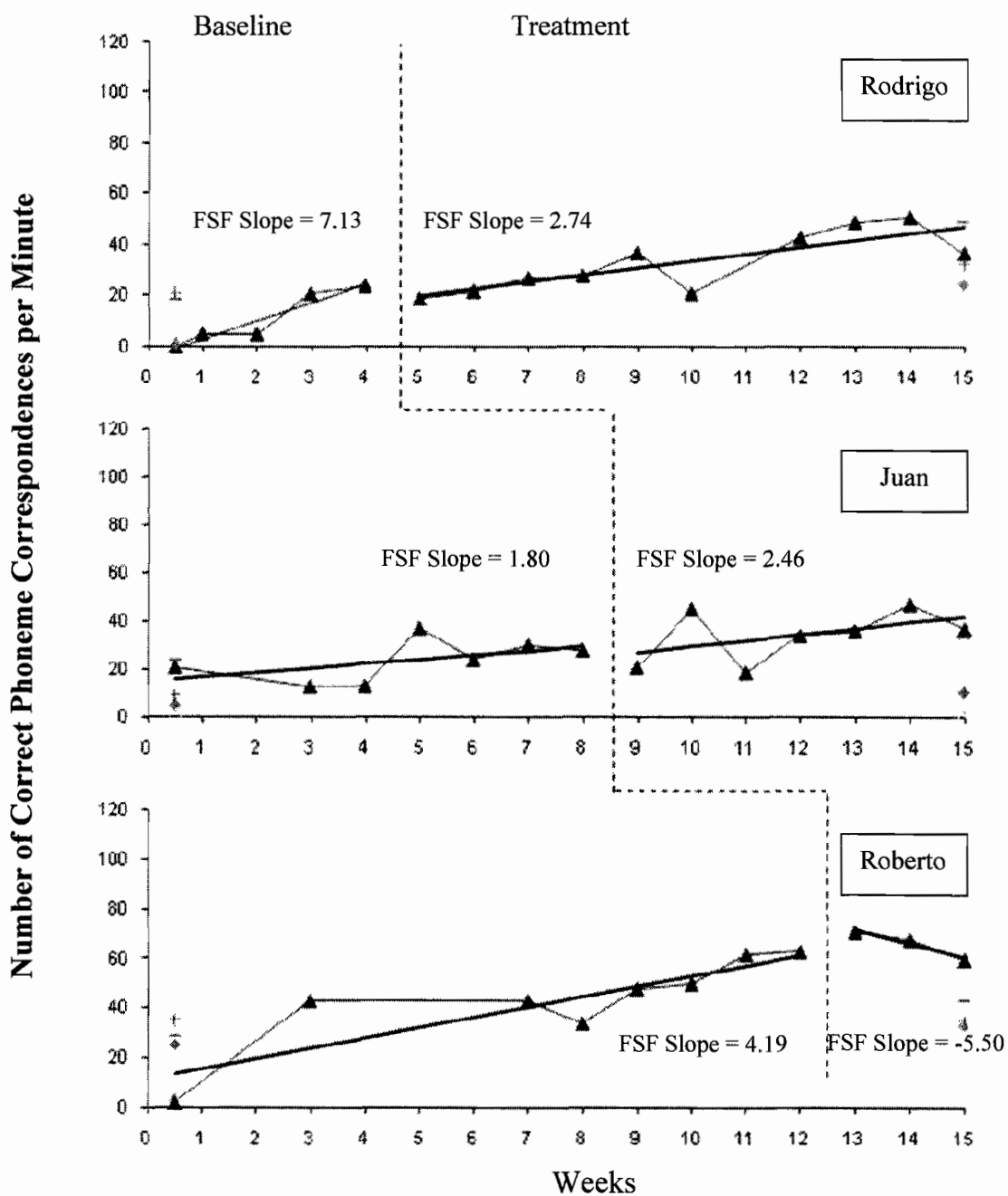
Figure 10

3rd Replication for the Effect of "Templates" for Direct and Explicit Spanish Instruction on Phonemic Awareness Skills as Measured with Fluidez en las Segmentación de Fonemas
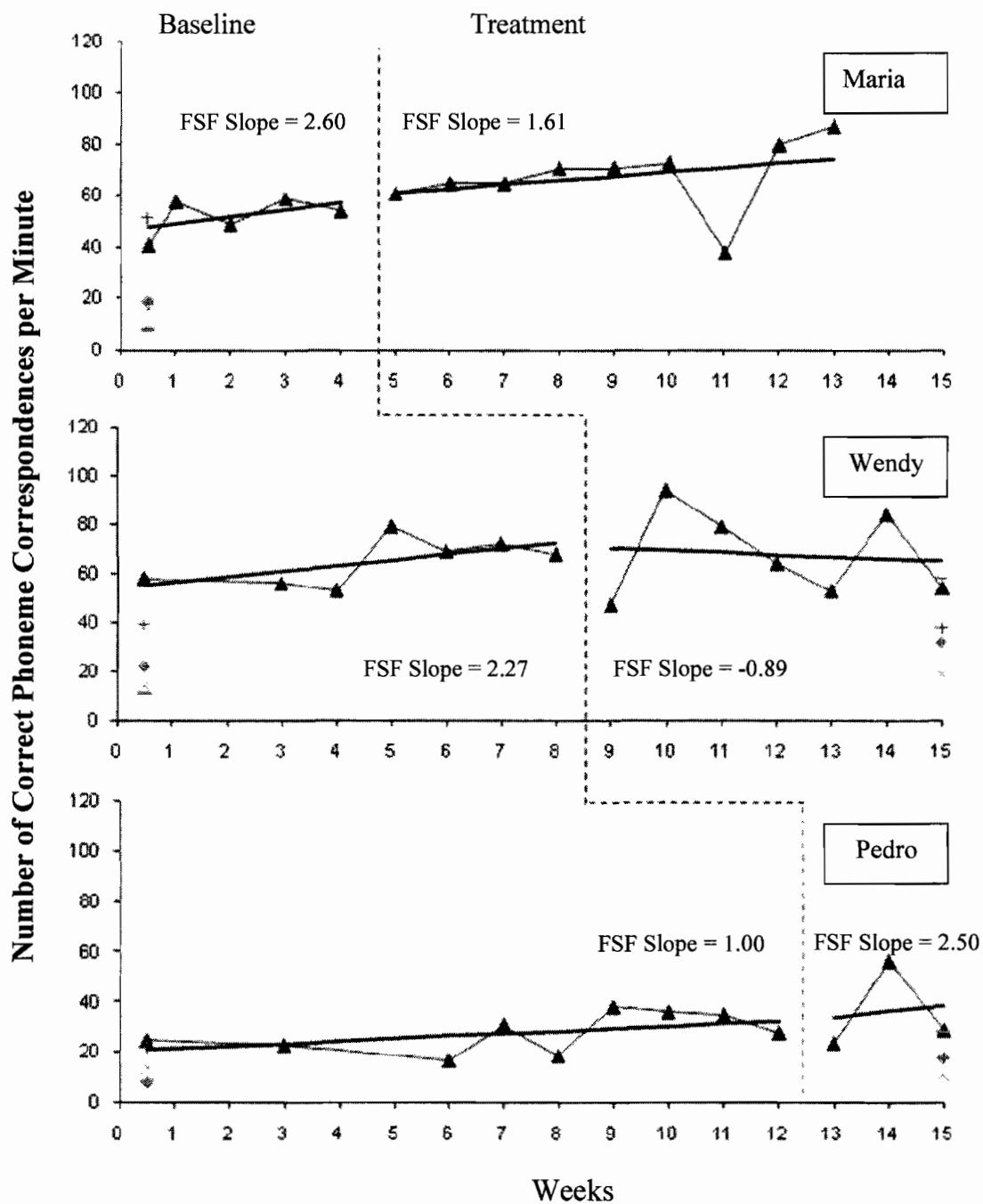
Figure 11

4th Replication for the Effect of "Templates" for Direct and Explicit Spanish Instruction on Phonemic Awareness Skills as Measured with Fluidez en las Segmentación de Fonemas
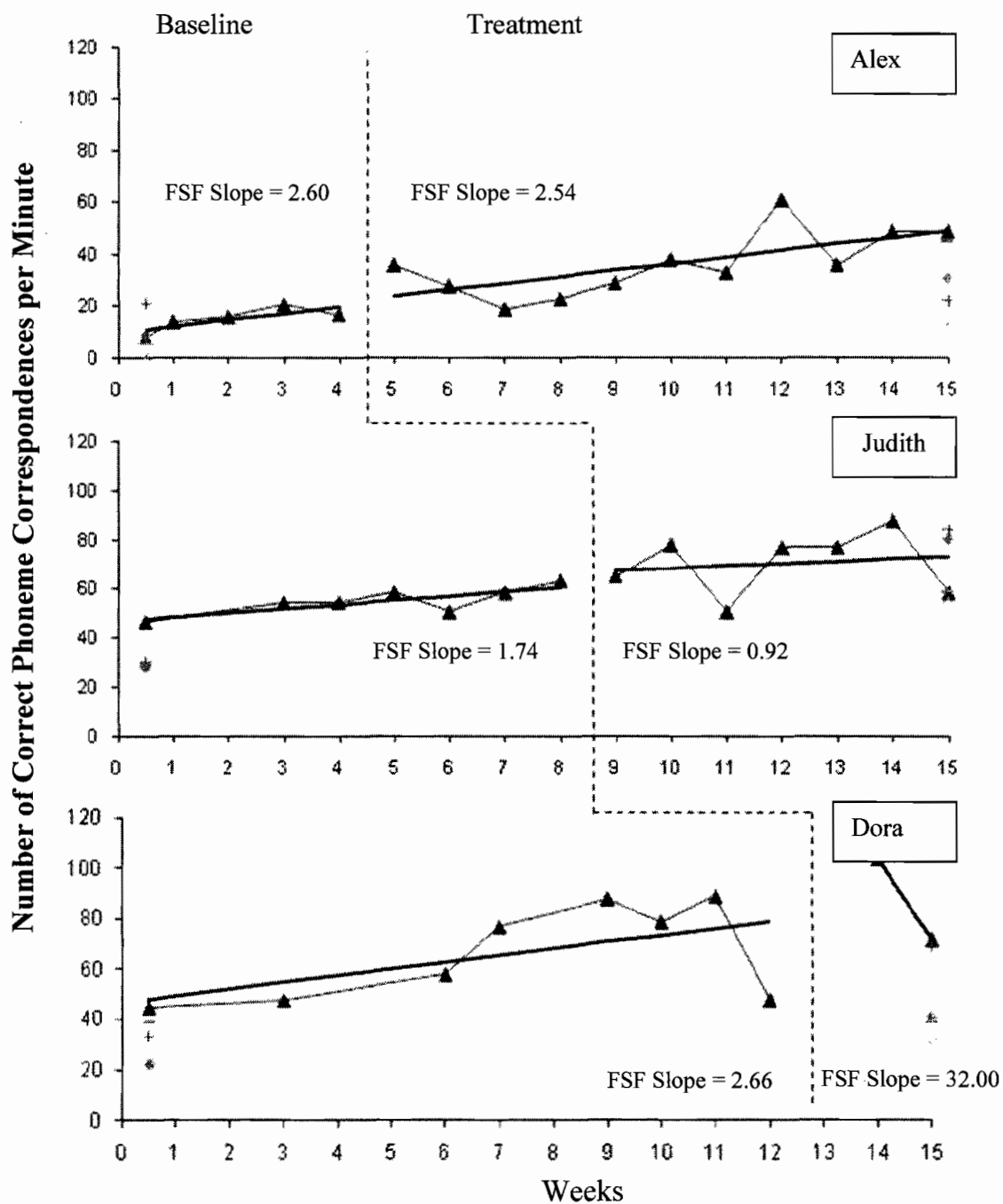
Summary

Results of the visual analysis did not demonstrate a functional relationship between the use of the "Templates" for Direct and Explicit Instruction and an increase on the early literacy skills of kindergarten bilingual English language learners. Of the 12 intervention effects that were possible, only three were clearly documented when FPS measures were used and only two effects were documented when FSF were used. Furthermore, four of the 12 different points in time of possible effects of the intervention were documented for FPS and only one for FSF. These results indicate that the intervention did not demonstrate positive effects on the student's rate of acquisition of alphabetic principle and phonemic awareness skills.

Hierarchical Linear Modeling (HLM)

In times when evidence-based practices are critical, HLM has been a promising approach for the analysis for single subjects designs (Jenson, Clark, Kircher, and Kristjansson, 2007). HLM can augment or supplement a visual analysis of data, especially when there are multiple replications of the design. HLM (Raudenbush & Bryk, 2002) was used to analyze the effect that the "Templates" for Direct and Explicit Spanish Instruction had on the early literacy skills (particularly FPS and FSF) of the participant kindergarten bilingual ELL students. HLM was used to compare rates of progress on fluidez en las palabras in sentido (FPS) and fluidez en la segmentacion de fonemas (FSF)

between the baseline and intervention phases for students, and more importantly

between the treatment and comparison group. To examine the effect of this intervention a

regression discontinuity model was used. The HLM notations for this growth model

follows.

Model Equations

The Level 1 model tested the effect of the intervention and error analysis guided

by weekly assessments on students FPS skills from the baseline to the treatment phase

$$Y_{ti} = \pi_{0i} + \pi_{1i} a_{1ti} + \pi_{2i} a_{2ti} + \pi_{3i} a_{3ti} + e_{ti}$$

or

$$Y_{ti} = \pi_{0i} + \pi_{1i} (time) + \pi_{2i} (intervention) + \pi_{3i} (time*intervention) + e_{ti},$$ where

Y_{ti} is the score or the student i at time t, π_{0i} is the intercept or score at time zero for the

baseline phase, π_{1i} is the growth rate during baseline phase. Intervention is coded as an

indicator variable (i.e., baseline = 0 intervention phase = 1). Time (a_{1ti}) is centered for

each subject with the phase change coded as 0. For the baseline phase ($a_{2ti} = 0$), the

model simplifies to:

$$Y_{ti} = \pi_{0i} + \pi_{1i} (time) + e$$

And for the intervention phase ($a_{2ti} = 1$ and $a_{3ti} = time$), the model simplifies to

$$Y_{ti} = (\pi_{0i} + \pi_{2i}) + (\pi_{1i} + \pi_{3i})(time) + e$$

Thus π_{2i} represents the difference in intercept at time zero, and π_{3i} represents the change in slope at time zero where time zero is specific to represent the phase change from baseline to intervention. Finally, e_{ti} is within student error. Level 1 provides within student evaluation of the intervention effect. *Table 11* illustrates the coded variables for a_{1ti}, a_{2ti}, and a_{3ti} to represent the piecewise regression for a subject who was 12 weeks in baseline and 8 weeks in intervention (Raudenbush & Bryk, 2002). The Level 2 model tested the effect of the "Templates" on FPS and FSF between treatment group (n = 12) and the comparison group (n = 12). The representation of the model follows.

Table 11

Coding Scheme for Piecewise Linear Model for Each Weekly Assessment Session

	Weekly Assessments																			
	Baseline Week												Intervention Week							
Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
a_{1ti}	-11	-10.5	-9.5	-8.5	-7.5	-6.5	-5.5	-4.5	-3.5	-2.5	-1.5	-0.5	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5
a_{2ti}	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
a_{3ti}	0	0	0	0	0	0	0	0	0	0	0	0	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5

Note. a_{1ti} = time; a_{2ti} = intervention; a_{3ti} = time * intervention.

$$\pi_{0i} = \beta_{00} + r_{0i}$$

$$\pi_{1i} = \beta_{10} + r_{1i}$$

$$\pi_{2i} = \beta_{20} + r_{2i}$$

$$\pi_{3i} = \beta_{30} + r_{3i}$$

β_{00} symbolizes the average scores at time zero for the baseline phase. β_{10} is the average growth rate during the baseline phase. The change in trajectory is of primary interest in this study, with β_{20} representing the average change in level from the baseline phase to the intervention phase (i.e., change in intercept at time zero). In modeling the interaction coefficients, β_{30} symbolizes the average change in slope from baseline to intervention phases.

There are four error terms within Level 2 of this model: r_{0i} represents the average error (residual) in scores at time zero for baseline phase between students, r_{1i} is the average error (residual) in growth rate during the baseline phase between students, r_{2i} is the average error (residual) in the difference in intercepts at time zero between students, and r_{3i} represents the average error (residual) in estimating the difference in slopes between baseline and intervention phases between students. Whereas Level 1 provided a within student model of the results, Level 2 provides a between student model of results.

Fluidez en las Palabras sin Sentido (FPS)

Results of the FPS regression discontinuity growth model are presented in *Table 12*. The average predicted FPS score at Time = 0 was 26.51 clspm, which was significantly difference from 0, $t(11) = 4.41$, $p < .05$. Time = 0 in this study was set at the point of change from baseline to intervention phase. *Figure 12* illustrates Time = 0 for a student within this study. This figure also reflects the intercept and slope for each condition and shows relevant patterns by group and phase.

The average slope for all students was 1.79 during the baseline phase, which was significantly different from 0, $t(11) = 4.41$, $p < .05$. There was no significant change in level from the baseline to the intervention phase, $t(11) = 1.24$, $p > .05$. The change in level was a 2.71 point non-significant increase in predicted FPS scores at the point of transition from baseline to intervention phase. The interaction between time and intervention phase resulted in a non-significant decrease in slope of progress of -0.40, $t(11) = -0.60$, $p > .05$. Thus, no significant effects of intervention were documented in the between subjects analysis.

Fluidez en la Segmentación de Fonemas (FSF)

Results of the FSF regression discontinuity growth model are presented in *Table 13*. The average predicted FSF score at Time = 0 was 46.40 cppm, which was significantly difference from 0, $t(11) = 7.62$, $p < .05$. Time = 0 in this study was set at the

Table 12

The Effect of "Templates" for Direct and Explicit Spanish Instruction on the Early

Literacy Skill for Fluidez en las Palabras sin Sentido

Effect	Estimate	SE	df	t-Value
Intercept	26.51*	6.00	11	4.41
Time (Slope)	1.79*	0.62	11	2.87
Intervention Phase	2.71	2.19	11	1.24
Time*Intervention Phase	-0.40	0.67	11	-0.60

*$p < .05$.

Figure 12

Growth Curves for Baseline and Intervention Phases on Fluidez en las Palabras sin

Sentido
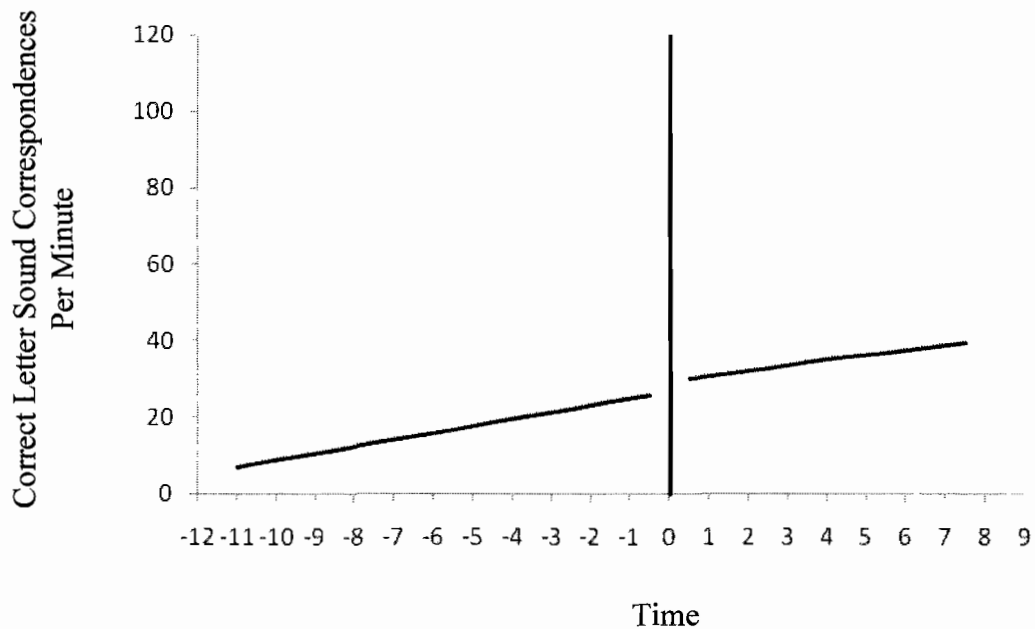
Time

point of change from baseline to intervention phase. *Figure 13* illustrates the location

of Time = 0 for a student within this study. This figure also reflects the intercept and

slope for each condition and shows relevant patterns by phase.

The average slope for all students was 2.24 during the baseline phase, which was

significantly different from 0, $t(11) = 4.04$, $p < .05$. There was no significant change in

level from the baseline to the intervention phase, $t(11) = 1.23$, $p > .05$. The change in

level was a 4.19 point non-significant increase in predicted FSF scores at the point of

transition from baseline to intervention phase. The interaction between time and

intervention phase resulted in a non-significant decrease in slope of progress of -1.29,

$t(11) = -1.39$, $p > .05$. Thus, no significant effects of intervention were documented in the

between subjects analysis.

Table 13

The Effect of "Templates" for Direct and Explicit Spanish Instruction on the Early

Literacy Skill for Fluidez en las Segmentación de Fonemas

Effect	Estimate	SE	df	t-Value
Intercept	46.40*	6.52	11	7.12
Time (Slope)	2.24*	0.55	11	4.04
Intervention Phase	4.19	3.41	11	1.23
Time*Intervention Phase	-1.29	0.93	11	-1.39

*$p < .05$.

Figure 13

Growth Curves for Baseline and Intervention Phases on Fluidez en las Segmentación de Fonemas
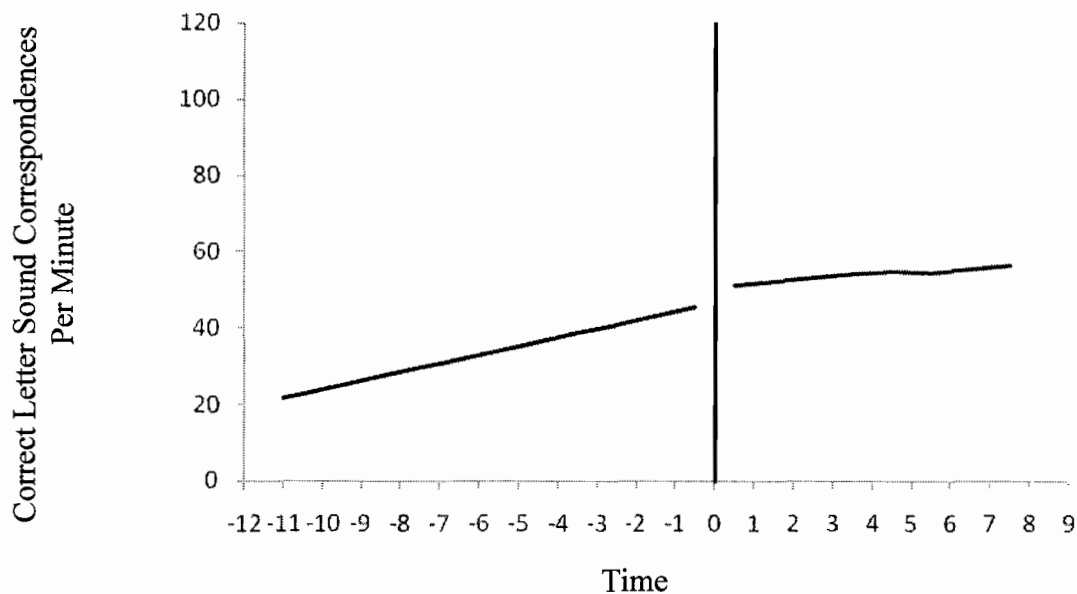
Summary

The visual and statistical analyses demonstrated that using the "Templates" for Direct and Explicit Instruction did not change the phonemic awareness and alphabetic principle skills for most Kindergarten English language learners' students that participated in this study. Results of the HLM analysis found no significant effects of the intervention in the between subjects analysis. The visual analysis of single-subject designs indicated that of the 12 subjects, only three appeared to exhibit a positive effect

of the intervention when measures of alphabetic principle were used and only two when phonemic awareness measures were used. Students for whom the "Templates" did not appear to have a positive effect were those that were already making adequate progress while receiving the small group curriculum practice. Our study provides some initial indication that students who are not making adequate progress with the small group curriculum practice may potentially benefit from the use of more structured, direct, and explicit instruction with the use of the "Templates".

CHAPTER V

DISCUSSION

In the last few years, direct instruction has been shown to be one of the most highly effective teaching methods for a wide range of content and populations, including students with learning disabilities (Watkins & Slocum, 2004). Using direct instruction with a Spanish intervention program expands the benefits of this teaching method to a new domain and to a different population of Spanish learners. Additionally, direct instruction increases educators' access to teaching strategies and curriculum materials to better serve this population.

The TEDESI are a new intervention that was recently developed by the Western Regional Reading First Center under the coordination of Peinado, Baker, and Rogers (2006). The present study was the first study to evaluate the effects of the TEDESI intervention on the basic reading skills of bilingual kindergarten students learning to read in Spanish. Another larger scale study using a group research design methodology is currently being conducted at the Pacific Institute of Research at University of Oregon, although no preliminary results are yet available.

Identifying the effects of direct and explicit Spanish instruction using the TEDESI with bilingual English language learners was the main goal for this study. We hoped to contribute to literacy and language development theories that specifically apply to ELL

and to Spanish intervention programs. Specifically, this study examined the effects of

TEDESI on the Spanish basic early literacy skills (particularly focused on phonemic

awareness and phonic skills) of Hispanic English language learner kindergarten students.

Results of both visual analysis and quantitative analysis indicated that while some

students evidenced significant increases in level (particularly for FSF) and slope (for both

FPS and FSF) over the duration of the study, the reading growth and outcomes of

students could not be clearly attributed to the direct and explicit Spanish instruction of

phonemic awareness and phonic skills with the "Templates". Of the twelve students that

participated in the study only five (Samuel, Rodrigo, Maria, Wendy, and Alex) appeared

to benefit from the intervention compared to their baseline performance. A common

characteristic of the students who benefited from the intervention was a lack of adequate

progress while they were receiving the baseline small group curriculum practice. Students

for whom the TEDESI did not appear to have a positive effect were those that were

already making adequate progress while receiving the small group curriculum practice

(Ofelia, Rodrigo, Roberto, Judith, and Dora). These students' skills continued growing

when they received the "Templates" intervention and while some progressed at a slower

pace they may have reached sufficient levels of skills that continuing or exceeding

baseline levels of growth was unlikely.

Thus, this study provides some initial indication that students who are not making

adequate progress with the small group curriculum practice may potentially benefit from

the use of more structured, direct, and explicit instruction with the use of the TEDESI.

The use of a single-subject methodology was particularly helpful for identifying the

characteristics of students for whom the TEDESI may be more effective, which could not have been a clear outcome in a group design. However, subsequent research is needed to evaluate this hypothesis.

The HLM approach also appeared to be valuable as an effective method for evaluating the effects of the intervention. In single-subject studies, the level of statistical analysis is often limited to visual analysis and conventional parametric analyses (e.g. *t*-test and ANOVA). HLM provided an evaluation of the effects of the intervention, summarized over the 12 participating students. HLM allowed the modeling of repeated measures within subjects while also evaluating the effect of the intervention between subjects. The HLM analysis found no significant effects of the intervention in the between-subjects analysis. The accuracy of conclusions from the visual analysis were enhanced with the inclusion of HLM procedures. HLM has been suggested as a promising approach for the analysis for single-subject designs (Jenson, Clark, Kircher, & Kristjansson, 2007). However, the use of the HLM approach with this small sample size did not allow tests of effects with the level of power that would be available with larger sample size.

Limitations

It is important to note several limitations to the external validity and the construct validity of the independent and dependent variables of this study. Threats to internal validity did not appear to be a weakness of this study. Threats to internal validity are

those that may threaten our ability to attribute changes in the dependent variable due to change in the independent variable. They may include, but are not limited to: maturation, attrition, subject selection bias, history, instrumentation, regression toward the mean, and testing (Shadish, Cook, & Campbell, 2002). Threats to the external validity consist of the extent to which the results of this specific study would apply to the real world setting. (Shadish, Cook, & Campbell, 2002). Threats to the construct validity relevant to our study were those related to the manipulations due to the independent variables, particularly the lack of representativeness and reliability that this had in our study (Cook & Campbell, 1979). Discussion of the threats to internal, external, and construct validity follows.

Threats to Internal Validity

A multiple baseline single subjects design was used in this study. The nature of this design controls for most threats to internal validity. Maturation and history are threats to internal validity that are controlled by implementing the intervention at different points in time for different students, so that changes in student's performance are not likely to be due to regularly occurring maturation processes or to history but instead can be attributed to the intervention. Testing and subject selection bias are also threats to internal validity that are controlled in this design with the use of vertical comparisons in the between subjects effects. All students served as their own baseline and they all participated in baseline and treatment procedures.

Attrition, instrumentation, and regression were not a plausible threat to the internal validity of this study. Although fourteen students were originally selected for this study, data from only twelve were used in our analysis. The two students that were not consider to be part of the analysis did continue to receive the intervention with the other students; however, their high number of absences compromised the analysis of treatment effects (data was insufficient for meaningful interpretations). Instrumentation was not considered a threat because experienced observers were hired to conduct all the required assessments, and they were the same across all of the assessment sessions. Regression toward the mean was not considered a threat because students were randomly assigned to their treatment groups, they all received the intervention at different points in time, and they were not selected on the basis of extreme scores, performance, or characteristics.

Threats to External Validity

External validity refers the extent to which the results meaningfully apply to the real world. The primary goal of this study was to determine whether a functional relationship existed between the use of the "Templates" for Direct and Explicit Spanish Instruction and an increase on the early literacy skills (phonemic awareness and phonic skills) of kindergarten bilingual English language learners. With single-subject studies, generalization to other subjects is addressed through multiple replications of the same treatment and design that produce similar results for different participants.

Three stages of replications have been suggested before results can be generalized to other students: direct replication, systematic replication, and clinical replications (Horner, 2008). Direct replications are conducted by the same researcher, with the same subjects, and in a specific setting. Direct replications are followed by systematic replications, which involve replications conducted by different researchers, different behaviors, or different settings. Finally, clinical replications are conducted after systematic replications, where the developments of very specific treatment packages are tested prior to generalization.

The current study consisted of four direct replications conducted by the same researcher in the same setting. Results of these replications were inconsistent across different subjects. It is imperative to clearly define the characteristic of participants for whom this intervention could potentially be effective and conduct additional direct, systematic, and clinical replications with other subject populations. An important next research question may be: can we meaningfully improve basic Spanish reading skills by using direct and explicit Spanish instruction with the "Templates" for students who are not making adequate progress in their current intervention?

Threats to Construct Validity

Construct validity is related to the interpretation or basis of the effect that was demonstrated in an experiment due to the specific aspects of the intervention. Threats to construct validity include those related to the independent variables such as inadequate

operationalization (e.g. lack of reliability, lack of representativeness, and lack of impact), and treatment artifacts (e.g. demand characteristics in the research setting, experimenter expectancy effects pretest sensitization to the treatments, and order effects). Threats to construct validity also include those related to the dependent variables such as inadequate operationalization (e.g. lack of reliability, lack of representativeness, and lack of sensitivity of measures), and measurement artifacts (e.g. strategic responding by the participants).

Lack of representativeness of the independent variable was the most important limitation to the construct validity of this study. Originally we intended to provide the intervention for 30 minutes five days a week; however, due to time restrictions we were only allowed to provide the intervention for 20 minutes four days a week. While the interventionists tried to use the time to the maximum, sometimes the classroom teacher had planned other activities that interfered with intervention activities. We believe this reduced our ability to make a more substantial impact on the students' learning. Lack of reliability of the independent variable was another limitation. One of the interventionists introduced some variability in treatment that could have affected the construct validity of our study. According with our observations this interventionist was not implementing the intervention with fidelity (e.g. he/she was not using adequate signals, he/she was not following the daily lesson plan properly, and his/her the pace of instruction was too slow. While we intended to solve this problem by reassigning interventionists (no other interventionist were available) to different groups so that the group that would be less affected was the one that already had shown an effect of the intervention, some

limitations to the integrity of the independent variable could have occurred before this event was detected. A threat to the dependent variable was the shorter length of time in treatment phase, which could have made measures of response or change in growth less reliable. No other threats to the construct validity of independent or dependent variables were observed.

Implications

Although we were not able to clearly demonstrate the effects that direct and explicit instruction has on bilingual kindergarten English language learners, a few students appeared to make gains with the TEDESI. Other studies have demonstrated the effects of direct and explicit instruction and resulting decreases in reading difficulties (Adams & Engelmann, 1996; Fuchs, Fuchs, Mathes, & Simmons, 1997; Juel, Minden-Cupp, 2000; Torgesen, 2000). These studies have been conducted with a range of students, particularly monolingual students with special needs and English language learners at risk for reading difficulties who received treatment in English (Linan-Thompson, Vaughn, Hickman-Davis, Kouzekanani, 2003), and very few in Spanish (Vaughn, Linan-Thompson, Mathes, Cirino, Carlson, Pollard-Durodola, Cardenas-Hagan, and Francis, 2006). The present study included bilingual kindergarten English language learners, and provided instruction in the student's native language. While we were not able to clearly demonstrate the effects of the intervention, some important lessons were learned for future studies:

(a)   The intervention helped some students that were not making adequate

progress with current instructional materials. This means that we need to

try to identify who the intervention is likely to work with, and we need to

treat intervention as testable hypothesis to see if it in fact works for each

student. If the intervention is proven to be effective for students that are at

risk for developing early literacy skills with current instructional materials

we can use early identification and intervention models and later use the

TEDESI as a targeted intervention. Examples of these models include the

Outcomes Driven Model (Good, Gruba, & Kaminski, 2002), the Problem

Solving Model (Deno, 1989), and Three Tier Models for primary,

secondary, and tertiary prevention for academic or Response to

Intervention (RTI) model (Gresham, VanDerHeyden, & Witt, 2005;

Kame'enui, Good, & Harn, 2005) and behavioral problems (Horner,

Sugai, Todd, & Palmer, 2005), which were fully described in the literature

section of this paper.

(b)   Use a multiple baseline approach with two tiers on a much larger time.

The current study used a multiple baseline approach with three tiers; while

four tiers are typically recommended in order to document three

demonstrations of the effect at three different points in time, we can also

have such demonstrations if we have multiple baseline designs with two

tiers that last a much longer time; however, it will be necessary to conduct

more replications as demonstrated in this study. In our study, due to time

limitations, students that received the intervention at the end (third tier) did not receive it for enough time to interpret their response accurately.

(c)   Continue using weekly assessments. Weekly assessments seem to be an effective approach to measure the progress that students make across baseline and interventions phases. Initially we considered having two assessments sessions a week, however, this could have caused more logistical challenges and taken valuable time from intervention. A limitation of our weekly assessment consisted of the initial and final sessions where most students performed poorly. Future researchers may consider disregarding initial and final assessments or plan better conditions for the final assessment (e.g. not have it during the last week of classes).

(d)   Analyzing single-subject results with a quantitative approach such as HLM seemed to augment the visual analysis. This quantitative approach seemed to provide a valuable way to evaluate the effects of an intervention conducted with replications of a single-subject design. HLM and visual analysis seemed to complement each other in evaluating treatment effects. However, some may argue that visual analysis approaches are not as accurate at representing the effect that the intervention had on students' reading outcomes.

Conclusions

The visual and statistical analyses demonstrated that using the "Templates" for Direct and Explicit Instruction did not change the phonemic awareness and alphabetic principle skills for most Kindergarten English language learner students that participated in this study. Results of the HLM analysis found no statistically significant effects of the intervention in the between subjects analysis. The visual analysis of single-subject designs indicated that of the 12 subjects, only three appeared to exhibit a positive effect of the intervention when measures of alphabetic principle were used and only two when phonemic awareness measures were used. Students for whom the "Templates" did not appear to have a positive effect were those that were already making adequate progress while receiving the small group curriculum practice. These students' skills continued growing when they received the "Templates" intervention and while some progressed at a slower pace they may have reached a sufficient level of skills that continuing or exceeding baseline levels of growth was unlikely. It is also possible that this type of instruction with the TEDESI was not engaging for them. These kindergarten students were for the most part used to dynamic activities that involved games and "hands on" activities. Therefore, the use of direct and explicit instruction that requires their complete attention and frequent response may not have been appropriate for them.

APPENDIX A

LETTER OF PARENTAL CONSENT

Dear parents,

Your child is invited to participate in a research study conducted by me, Fatima Elvira Rogers, from the University of Oregon, School Psychology Program. I am a doctoral student who is very interested in learning more about how children learn to read in Spanish. I am currently conducting my dissertation study, and your child's school and teacher has agreed to participate. The purpose of my research is to find out more about how to provide effective Spanish reading instruction to Spanish speaking children.

The study will last 18 weeks total, starting at the end of January and ending in the middle of May. If your child participates, he/she would be randomly assigned to one of three different treatment groups that will receive 20 minutes of daily direct and explicit Spanish instruction with a newly designed method. Each group will start treatment at different times and remain on it until the end of the study. Before and after the treatment all children will be assessed with reading tests that will take approximately 5 minutes. Additional weekly or biweekly reading assessments that take approximately 3 minutes each (two a week) will be conducted to all children for a period of seventeen weeks starting at the end of January. For these tests, students will be asked to read words and sounds.

No significant risks have been associated with this study, with the exception of any nervousness your child may experience while taking the reading test. Precautions have been taken to ensure confidentiality of all student participants. Your child's performance on these tests will not affect the grades your child receives at school. Results from this study will be used to help teachers provide better instruction to children who are learning to read in Spanish. Students will receive a small reward for participating (e.g., pencils, stickers).

Any information that is obtained in connection with this study and that can be identified with your child will remain confidential and will be disclosed only with your permission. Your child's identity will be kept confidential by the use of subject numbers to identify student test scores, rather than student names.

Your child's participation is voluntary. The decision to not have your child participate in this project will not affect you, or your child's, relationship with their teacher or with the school. If you have any questions, please call or email Fatima Rogers (frogers@uoregon.edu, 541-302-5866) or Roland Good, my advisor at University of Oregon (rhgood@uoregon.edu, 541-346- 2897). Also, there is an office at the University of Oregon (the Office for Protection of Human Subjects, 541-346-2510) that you can call if you have questions about your child's rights when participating in a research project (541-346-2510). **Please keep additional copy of this letter for your records and send the signed document in the provided envelop.**

Your signature indicates that you have read and understand the information provided above and that you willingly allow your child to participate. You may withdraw your consent at any time and discontinue participation without penalty.

I give consent for my child (name)_____ to participate in this study.

Print Parent/Legal Guardian name: _____

Parent/Legal Guardian Signature:_____ _____
Date_____ _____

APPENDIX B

SCOPE AND SEQUENCE FOR

TEMPLATES FOR DIRECT AND EXPLICIT SPANISH INSTRUCTION

Scope and Sequence for Templates

#	Tile	Skill
1	Guide to teach blending syllabus	Phonemic Awareness
1A	Example to teach blending syllabus	Phonemic Awareness
2	Guide to teach blending sounds	Phonemic Awareness
2A	Example to teach blending sounds	Phonemic Awareness
3	Guide to teach blending sounds and syllabus	Phonemic Awareness
3A	Example to teach blending sounds and syllabus	Phonemic Awareness
4	Guide to teach segmenting words into syllabus	Phonemic Awareness
4A	Example to teach segmenting words into syllabus	Phonemic Awareness
5	Guide to teach segmenting words into sounds	Phonemic Awareness
5A	Example to teach segmenting words into sounds	Phonemic Awareness
6	Guide to teach letter names	-
6A	Example to teach the name of the letter "m"	-
6R	Guide to review the letter names	-
7	Guide to teach letter sounds	Phonics
7A	Example to teach the sound of the letter "m"	Phonics
7R	Guide to review letter sounds	Phonics
8	Guide to teach blending sounds and syllabus	Phonics
8A	Example to teach blending sounds and syllabus	Phonics
9	Guide to teach the continuous blending of letter sounds	Phonics
9A	Example to teach the continuous blending of letter sounds	Phonics
10	Guide to teach spelling and writing words	Phonics
10A	Example to teach spelling and writing words	Phonics
11	Guide to teach reading whole words	Fluency
11A	Fist example to teach reading whole words	Fluency
12	Guide to teach reading a sentence	Fluency
12A	Example to teach reading a sentence	Fluency
13	Guide to teach fluency reading: Basic level	Fluency
13A	Example to teach fluency reading: Basic level	Fluency
14	Guide to teach fluency reading: Intermediate level	Fluency
14A	Example to teach fluency reading: Intermediate level	Fluency
15	Guide to teach fluency reading: Advanced level	Fluency
15A	Example to teach fluency reading: Advanced level	Fluency

APPENDIX C

EXAMPLE TO TEACH THE SOUND OF THE LETTER "M"

Tarjeta #7ª	Ejemplo para enseñar <u>el sonido</u> de la letra "m" Fonética			
Kinder	**Tema 2**	**Semana 1**	**Día 2**	**página T20**
Actividad	Enseñar el sonido de la letra "m".			
Preparación	Tenga lista la tarjeta de Mara Mariposa.			
Señales				

		Haga	**Diga**
Enfoque	Muestre la tarjeta de Mara Mariposa	¿Sonido? /mmm/	
Espere	1 ó 3 segundos.		
Señal	Toque debajo de la letra*.		

*Para sonidos cortos (/b/, /d/, /ch/, /g/, /j/, /k/, /ñ/, /p/, /t/) toque debajo de la letra por 1 segundo, para sonidos continuos toque debajo de la letra por 3 segundos.

1. Explicación	(Muestre la tarjeta.) **Mara Mariposa empieza con la letra "eme". El sonido de esta letra es** (Toque debajo de la letra*.) **/mmm/. Cuando toque debajo de la letra quiero que me digan <u>el sonido</u>** (enfatice "el sonido") **de la letra hasta que yo la deje de tocar.**
2. Demostración	**Mi turno.** (Ponga su mano en el pecho.) **<u>El sonido</u> de la letra "eme" es** (Espere 1 segundo y toque debajo de la letra.) **/mmm/.**
3. Práctica de la maestra y el grupo	**Ahora todos.** (Muestre la tarjeta.) **¿Sonido?** (Espere 1 segundo y toque debajo de la letra.) **/mmm/.**
4. Práctica de grupo	(Apunte a los estudiantes.) **Ahora ustedes.** (Muestre la tarjeta.) **¿Sonido?** (Espere 1 segundo y toque debajo de la letra.) */mmm/.* **De nuevo.** (Muestre la tarjeta.) **¿Sonido?** (Espere 1 segundo y toque debajo de la letra.) */mmm/.*
5. Turnos individuales	(Llame a los estudiantes en un orden impredecible. Escoja con más frecuencia a estudiantes que hicieron errores.) **Turnos individuales. María.** (Muestre la tarjeta.) **¿Sonido?** (Espere 1 segundo y toque debajo de la letra.) */mmm/.*
6. Corrección Corrija los errores inmediatamente después de que los estudiantes los cometan.	(Ponga su mano en el pecho.) **Mi turno.** (Muestre la tarjeta.) **¿Sonido?** (Espere 1 segundo y toque debajo de la letra.) **/mmm/.** (Apunte a toda la clase, aunque sólo un individuo haya hecho el error.) **Ahora ustedes.** (Muestre la tarjeta.) **¿Sonido?** (Espere 1 segundo y toque debajo de la letra.) */mmm/.* **¡Sí, /mmm/!** **María.** (Muestre la tarjeta.) **¿Sonido?** (Espere 1 segundo y toque debajo de la letra.) */mmm/.* **¡Muy bien, /mmm/!**

APPENDIX D

GUIDE TO REVIEW LETTER NAMES

Card #1	Template for Letter Recognition (Name) Review
Steps	**Explanation/Script**
TASK	Letter name review
PREPARATION	Write the letters from the Lesson Map on the board.

SIGNALING PROCEDURE
Use appropriate signals to elicit unison student responses

	Do	Say
Focus	Point just to the left of the letter.	**Name?**
Wait time	2 seconds	
Signal for student response	Tap under letter.	

1. EXPLAIN TASK
Briefly name and explain the task to students prior to starting the activity.

Say: *You're going to practice saying the __names__ for some letters. When I point to the left of a letter, figure out the name in your head. Say the name of the letter when I tap under it.*

2. MODEL RESPONSE
Model desired response to the task with several examples using signaling procedure above.

(Model only the first couple of times you do this template.)
Say: *I'll model for you how to say the name of the first two letters. My turn.*
Model for students, using the signaling procedure above, with only teacher responding.

3. PROVIDE PRACTICE USING WHOLE-GROUP RESPONSES UNTIL KNOWLEDGE APPEARS TO BE SOLID
Use effective signaling, monitoring, and pacing procedures.

Say: *Each time I tap under a letter, you say the name of the letter. Your turn.*
Provide practice using the above signaling procedure with only students responding.

4. CORRECTION PROCEDURE

To correct students:
Say: *My turn.*
Use signaling procedure above with only teacher responding to correct students on missed item.
Say: *Your turn.*
Use signaling procedure above with only students responding to have them repeat correct response for missed item.
Back up two letters and continue.

5. INDIVIDUAL TURNS

When it appears that the group is consistently answering all items correctly, provide individual turns as a check. Call on several students for one letter each. Call on students in an unpredictable order. Call more frequently on students who made errors.

APPENDIX E

TEACHING SEQUENCE

Weeks	Skills	Templates	Activities Goal
1-2	Phonics	#7, Letter sounds #6: Letter names	Students got familiar with templates formats for the purpose of learning the use of teacher signs and developing easy with unison responses and waiting time. Letter sounds and letter names were introduced.
3-4	Phonics Phonemic Awareness	#7, Letter sounds #6: Letter names #1, Syllable blends #2, Individual sounds blends	Students continued learning new letter sounds and new letter names. Students learned and built fluency on how to blend two syllable words into individual sounds and into syllables.
5-6	Phonics Writing	#7, Letter sounds #6: Letter names #8, Blending sounds and syllabus #10, Spelling and writing	Students continued learning new letter sounds and new letter names. Students learned blending sounds into syllabus to read words. Students began writing words and had some practice with their reading.
7-8	Phonics Writing	#7, Letter sounds #6: Letter names #8, Blending sounds and syllabus #10, Spelling and writing	Students continued learning new letter sounds and new letter names. Students began having fluency with blending sounds into syllabus to read words. Students continued writing words and had some practice with their reading.
9-10	Phonics Phonemic Awareness	#7, Letter sounds #6: Letter names #8, Blending sounds and syllabus #10, Spelling and writing	Students continued learning new letter sounds and new letter names. Students become fluent with blending sounds into syllabus to read words. Students continued writing words and had some practice with their reading.

APPENDIX F

FIDELITY CHECK LIST FOR TEMPLATE PRACTICE

Checklist for the Implementation of Small Group Templates Practice

Observation of: (e.g. templates) _____	Date: _____	Time Started _____	Time Ended: _____
Observer: _____		Lesson #: _____	

KEY:	✓ = Observed	blank = not observed	N/A = not applicable

Template/Curriculum Practice	Rating	Comments
Has templates available and other materials ready		
Follows template formats		
Follows daily lesson plans		
Uses adequate signals		
Students respond to signals		
Pace of instruction is adequate - Transitions quickly & smoothly		
Teacher provides correction using template format		
Gains, maintains student attention		
States clear academic expectations		
States clear behavioral expectations		

Teacher behaviors		Behaviors Student #1				Behaviors Student #2			Behaviors Student #3		
Event		Event	Momentary Interval of Engagement			Momentary Interval of Engagement			Momentary Interval of Engagement		
D		U	20"	40"	60"	20"	40"	60"	20"	40"	60"
MD											
EC											
F											

Coding	
Teacher Behavior	Student Behavior
D = Directions	U = Unison Responses
MD = Modeling	E = Engagement
EC = Error correction	
F = Feedback	

APPENDIX G

FIDELITY CHECK LIST FOR SMALL CURRICULUM PRACTICE

Checklist for the Implementation of Small Group Curriculum Practice

Observation of: (e.g. templates)	Date:	Time Started:	Time Ended:
Observer: _____		Lesson #: _____	

KEY:	√ = Observed	blank = not observed	N/A = not applicable

Teacher preparation & presentation	Rating	Comments
Materials are ready & organized		
Follows daily lesson plans		
Uses adequate signals		
Teacher provides individual turns		
Gains, maintains student attention		
Pace of instruction is adequate / Transitions quickly & smoothly		
States clear academic expectations		
States clear behavioral expectations		

Teacher behaviors		Behaviors Student #1				Behaviors Student #2			Behaviors Student #3		
Event		Event	Momentary Interval of Engagement			Momentary Interval of Engagement			Momentary Interval of Engagement		
D		U	20"	40"	60"	20"	40"	60"	20"	40"	60"

MD		

Coding	
Teacher Behavior	Student Behavior
D = Directions	U = Unison Responses
MD = Modeling	E = Engagement
EC = Error correction	
F = Feedback	

EC

F

CHECKLIST FOR DIRECTIONS AND OPERATIONAL DEFINITIONS

Checklist Directions and Operational Definitions

Directions:

Use the check list to observe the teacher and three students and record the frequency and momentary interval of the following occurrences:
- Teacher giving directions
- Teacher's modeling and/or presentation of instruction (MD)
- Teacher's error correction (EC)
- Teacher's feedback (F)
- Target students engagement time (E, in a momentary interval recording)
- Students (U) unison responses.

NOTE: Operational definitions to each of the behaviors are provided at the end of this section, but any adjustments can be made according to someone's judgment.

Notice that the observation form has been divided into three sections: a list of items to be rated, the teacher behaviors, and student behaviors. Before starting the frequency and interval recording for teacher and student behaviors, the observer needs to observe and rate the list of items provided on the top of the document. The observer would come back to those at the end of the observation to complete any missing responses. After completing the item list, the observer needs to start the timer and begin with the teacher and student simultaneous observation. During the first minute the observer watches the first student and places a tally mark in the corresponding box if he or she was engaged at any time during the observation, also at the same time the observer records any behavior (from the list provided above) that teacher emits by placing a tally mark on the space provided for such element. After the first minute the observer moves shifts to observe student number two and continues observing teacher (same procedure for student number three). At minute four the observer comes back to student number one and follows the same process. The total time of this part of the observation is 15 minutes. Before ending the observation the observer take notes and makes comments of any relevant points, he/she also verifies that the item list on top of the checklist have been copleted.

Operational definitions of specific behaviors:

Directions: The teacher reads the specific directions provided in the template or text book.

Example: Today we are going to learn how to blend syllabus sounds to read

> Example: Today we are going to learn how to blend syllabus sounds to read words. First I am going to tell you how to do it and then you would do it yourself.
>
> Non-example: Teacher shows word card and says: /ma/ /pa/, word? mapa, now is your turn.

Modeling (MD): Instruction presented or modeled by the teacher to the whole class.

> Example: Teacher lectures using overhead projector. Teacher models how to hold a pencil (computer, calculator, etc.) in front of the class.
>
> Non-example: Student stands in front of class and shows a treasure.

Error Correction (EC): It consists of any verbalization the teacher uses to indicate an incorrect response, and it is usually followed by a correct one. During small template practice it should contain all the steps provided on template.

> Example: The student makes a mistake and the teacher immediately stop the lesson and says: "My turn", the word is "mapa". What word?
>
> Non-example: Teacher informs student that the word was incorrect, that talking is not allowed during instructional time, or other behavior not academically related..

Feedback (F): Consists of teacher's verbalizations (or material tokens) to praise accuracy or quality of work and/or appropriate behavior.

> Example: Teacher says: "Good work everybody"
>
> Non-example: Teacher says: "It is time for lunch, everybody get ready".

Engagement (E): Student looks at the teacher while he/she is talking, reads silently at desk, completes his/her works sheets, ask teacher academic related questions.

> Example: Student is taking notes while teacher presents lecture.
>
> Non-example: Student gets up from his/her desk while teacher presents lecture.

Unison Responses (U): All students respond at the same time to the teacher's request or cue.

Small Curriculum Practice Daily Lesson Plan

Theme focus: Phonics, the letter E	Number of Lecture #1	Day: Monday.

Objectives:
1. Learn name and sound of the letter Ee (Animated-Alphabet)
2. Learn to associate letters and sounds (e/, /e/, Ee.)

Materials:
1. Alphabet story song (letter Ee).
2. Student work sheet "E".

Activities:	Procedures:	Focus words
1.Edgard Elephant Song	1. Teacher uses Cd to present the song for the letter E. Students sing song along with the teacher	
2. Conect /e/ with Ee	2. Teacher asks students to find al the letters "Ee" in the student work sheet.	
	3. Teacher asks students to count all the letters "Ee" in the student work sheet. Later students share the results with the teacher in individual turns.	
	4. Teacher asks students to color the animal in the student sheet.	Libro de lectura:

Tem: Test-Review Vowels and consonants: Mm, Ss, Ll, Nn, & Pp   Number of Lectures: 21-25   Day: Monday May 5th, 2008.

Objectives:

1. Build fluency on combining sounds into syllabus.   2. Build fluency on letter sounds.   3. Build fluency on reading words

Materials: **Templates:**

1. Word cards for students.   2. Cards with letter A, E, I, O, U, Mm,   #7: Letter sounds   #9: Combining sounds
   Ss, Ll, Nn, & Pp

Activities:	Procedures:	Focus words:
1. Test knowledge of letters A, E, I, O, U.	1. Show card with letter A and give individual turns asking the sound of this letter, later show card with letter E and give individual turns asking the sound of this letter, then alternate both letters. Now do the same procedure for the other three letters (I, O, U). Take notes to identify what students do not know some specific sounds; share this information with me, so we can decide if we need to modify the plans for the week. If more than two students did not know the sounds of some letters follow template 7R to review the name of the letters.	Mesa oso Maso mío Lima sol Losa lee Nina una Luna pan Pana Pino
2. Test knowledge of letters Mm, Ss, Ll, Nn, & Pp	2. Show card with letter Mn and give individual turns asking the sound of this letter, later show card with letter Ss and give individual turns asking the sound of this letter, then alternate both letters. Later have focus words written in a board and ask student tell you the sound of the words you point (you could try asking to read the word if they want and only to students that you know might be able to read). Now do the same procedure for the other three letters (Ll, Nn, Pp). Take notes to identify what students do not know some specific sounds; share this information with me, so we can decide if we need to modify the plans for the week. If more than two students did not know the sounds of some letters follow template 7R to review the name of the letters.	
3. Combining sounds into words (T9)	3. Have focus words ready written in a sticky note in your template (only first five). Follow template 9 directions to segment words. This is a new strategy they will learn so make sure you model for them with two or three words following all the steps of the template, then ask students to do it on their own with different words.	
4. Reading words	4. Explain to students that they are going to read words on their on silently. Model to students how they need to work on their own. They must use the strategy they just learned to read words (template 9 strategy). Later, give each student a package of words to read silently. While students read the words help students that might straggle with reading. Remember that some students might finish right away so give them a book to read at the same time you give them the cards and explain to them that they can read the book (use book for activity #4) when they finish.	

DIBELS
Data System

KINDERGARTEN IDEL BENCHMARK GOALS

KINDERGARTEN

IDEL Measure	Beginning of Year Month 1 - 3		Middle of Year Month 4 - 6		End of Year Month 7 - 10	
	Scores	Status	Scores	Status	Scores	Status
Fluidez en Nombrar Letras (FNL)	0 - 2 3 - 5 6 and above	At risk Some risk Low risk	0 - 14 15 - 24 25 and above	At risk Some risk Low risk	0 - 24 25 - 39 40 and above	At risk Some risk Low risk
Fluidez en la Segmentacion de Fonemas (FSF-TLF)	0 - 4 5 - 14 15 and above	At risk Some risk Low risk	0 - 14 15 - 29 30 and above	At risk Some risk Low risk	0 - 34 35 - 49 50 and above	Deficit Emerging Established
Fluidez en las Palabras sin Sentido (FPS-TSL)	Not administered during this assessment period		0 - 9 10 - 19 20 and above	At risk Some risk Low risk	0 - 24 25 - 34 35 and above	At risk Some risk Low risk
Fluidez en el Uso de las Palabras (FUP)	BENCHMARK GOALS FOR THIS MEASURE HAVE NOT BEEN ESTABLISHED. Tentatively, students in the lowest 20 percent of a school district using local norms should be considered at risk for poor language and reading outcomes, and those between the 20th and percentile and 40th percentile should be considered at some risk.					

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