ABSTRACT

COMPARING BILINGUAL AND MONOLINGUAL STUDENTS’ RESPONSE TO INTERVENTION

By Brianna Jenesse Sarr

The use of differentiated initial instruction incorporating the student’s native language for bilingual students is well supported in research. However, there is less support to indicate whether bilingual students’ native language should be used in providing supplemental instruction or intervention. This study examined preliminary evidence for monolingual versus bilingual students’ response to an early literacy intervention administered in English. Overall, the bilingual students demonstrated equal or greater response to the intervention than the monolingual students, suggesting that intensive academic supports delivered in English may be appropriate for ELL children. Implications and areas of future research are discussed.
COMPARING BILINGUAL AND MONOLINGUAL STUDENTS’ RESPONSE TO INTERVENTION

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Chapter 1

Introduction

Differentiated initial instruction for English learners in their native language has favorable research support, particularly in the area of reading. While there is evidence that English learners may respond to intervention similarly to their English speaking counterparts, there is less evidence to address whether English proficiency predicts response to supplemental instruction or intervention. Research supports the use of peer-mediated early literacy interventions with students who are English language learners, but this population is comprised of children who vary in their language proficiency, and it remains unclear whether the success of these interventions is equivalent, regardless of the child’s command of English oral and written language. This study examined the response of both bilingual and monolingual students who were receiving a peer-mediated reading intervention to determine if there were differential effects. The 15-lesson program, Paths for Achieving Literacy Success (Mathes, Allor, Torgesen, & Allen, 2001), was administered to eight children, four of whom were monolingual, and four who were bilingual. The following research question was addressed:

*Research Question:* Are there differential effects of early literacy intervention for bilingual versus monolingual children?

This research question was addressed by administering an early literacy program, and comparing group differences on measures of phoneme segmentation fluency, nonsense word fluency, oral reading fluency, and general reading skills. Given the relatively low numbers in each group (N=4), the purpose was to provide preliminary evidence regarding the research question.
Chapter 2

Review of the Literature

With a growing population of English Language Learners (ELLs) entering the education system, their education has become a concern for schools across the country (August & Hakuta, 1997; August & Shanahan, 2006). A central issue surrounding the education of ELLs is whether initial reading instruction should be administered in their native language or in English (August & Shanahan). Because of the vast number of native languages spoken in the U.S., logistical concerns arise in the feasibility of providing initial instruction in all native languages. However, one study reported that between 40% and 50% of ELLs received initial instruction which incorporated some degree of their native language (Kindler, 2002). Since that study, that number may have decreased as a result of state policies mandating English instruction instead of native language instruction or a combination (August & Shanahan).

Support exists for utilizing some degree of native language into the general instruction of ELLs. A study conducted by Lopez & Tashakkori in 2004 found that students who were English language learners and received instruction in a two-way bilingual program achieved similar test scores on district assessments and the Scholastic Reading Inventory. Students in this experimental two-way bilingual program received instruction in English for 70% of the time and in Spanish 30% of the time. Their scores were similar to their native English speaking counterparts, despite lower initial test scores, lending support for the use of two-way bilingual programs in raising academic achievement in language arts for English language learners.

A review of research comparing bilingual instruction and English-only instruction revealed that of seventeen studies, most found significant positive effects of bilingual instruction on students’ reading performance (Slavin & Cheung, 2005). Additionally, in studies of English-only instruction which produced positive results, their results were not significantly greater than studies of bilingual instruction. Slavin & Cheung’s findings support earlier results of a meta-analysis conducted by Willig (1985), which reported bilingual education to be more effective than English-only instruction.
Another meta-analysis conducted in 2005 examined the effectiveness of bilingual education programs for English language learners (Rolstad, Mahoney, & Glass, 2005). Results indicated that bilingual education had a positive effect and was beneficial for English language learners, particularly in studies with outcomes measured in the student’s native language.

Despite much evidence of the positive effects of bilingual education, there is still some controversy surrounding the quality and methodology of instruction for ELLs. Some studies have found evidence that despite bilingual programs, the quality of instruction provided to ELLs is insufficient, and does not meet their instructional needs (August & Shanahan, 2006; Gersten & Baker, 2000). Other research has concluded that the method in which ELLs are instructed may be more important than the language in which instruction is provided (August & Hakuta, 1997).

Research has identified a variety of strategies which may benefit ELLs in the classroom. Scaffolding strategies were found to be particularly beneficial, using approaches such as keeping the language simple, using actions and illustrations to reinforce oral statements, asking for completion instead of generation, modeling correct usage of English and using visual aids (Gray & Fleischman, 2004). Establishing strong relationships with families of ELLs and identifying bilingual contacts in the community and schools were also strongly encouraged (Gray & Fleishman).

Specific techniques for educating ELLs were provided by the American Federation of Teachers. A policy brief suggested several features to assist ELLs in the classroom, including smaller class sizes, effective early reading instruction program which includes instruction in phonemic awareness and phonics skills, early intervention programs, safe and orderly learning environments, and a fully qualified teacher in every classroom (American Federation of Teachers, 2002). While many of these techniques may be considered best practice for instruction of any student, the American Federation of Teachers indicates the use of these specific strategies may be even more important in the education of ELLs.

**Supplemental Instruction/Intervention for ELLs**

While the majority of research has found beneficial effects of bilingual initial instruction or a combination of English and native language instruction, there is less
evidence to guide language of instruction for supplemental instruction or intervention, which is a critical element of a 3-tiered model of service delivery advocated by the National Association of School Psychologists (Ysseldyke, Morrison, Burns, Ortiz, Dawson, Rosenfield, Kelley, & Telzrow, 2006). In this model, the foundation for resource allocations in schools, such as special education eligibility and placement, is student response to high-quality, research-based supplemental intervention. Studies have indicated that ELLs vary in their response to intervention, just as their English speaking counterparts do (Richards, 2004; Vaughn, Linan-Thompson, & Hickman, 2003). That is, some ELLs make gains with intensive intervention, and some do not. Another study found that ELLs in a two-way bilingual immersion program responded to a supplemental peer-mediated reading program differently than English proficient students (Calhoon, Al Otaiba, Cihak, King, & Avalos, 2007). English learners in this study responded differentially to their English proficient counterparts in the areas of phoneme segmentation fluency, nonsense word fluency, and oral reading fluency (Calhoon, et al.). Differential response to intervention is expected across groups of students (Fuchs, 2004), including students who are English learners.

In a study by Gunn, Smolkowski, Biglan, & Black conducted in 2002, both Hispanic ELLs and non-Hispanic native English speakers (ESs) who received supplemental instruction performed better on measures of word attack, word identification, oral reading fluency, and comprehension, supporting research that ELLs may respond to intervention similarly to their ESs counterparts. The same study concluded that, because results were maintained a year after the conclusion of the intervention, supplemental instruction may prevent reading failure for both Hispanics and non-Hispanics (Gunn, et al.).

Further support for Gunn et al.’s findings was provided by Denton, Anthony, Parker, and Hasbrouck (2004). Their study examined two English literacy interventions’ effect on reading progress for Spanish speaking bilingual students. Results indicated that first graders who received tutoring using a systematic phonics approach made significant gains in decoding skills compared to students who did not receive tutoring, which is a critical component of early literacy skills (Denton, et al.).
As in the study by Denton et al., other research has indicated that bilingual students can benefit from instruction using phonological awareness and phonics. Swanson, Hodson, and Schommer-Aikins (2004) concluded that bilingual students can benefit from direct, systematic instruction that emphasizes phonological awareness. Another study, conducted by Chiappe, Siegel, and Wade-Woolley (2002), found that ELLs respond to instructional intervention in phonological awareness similarly to their monolingual counterparts.

Phonological awareness skills are important in outcomes measures in addition to the instruction component as well. Ehri, Nunes, Willows, Schuster, Yaghoob-Zadeh, and Shanahan (2001) and Linan-Thompson, Vaughn, Hickman-Davis, and Kouzekanani (2003) found that ELLs made growth in both phonological awareness skills and word reading skills.

Positive effects for English learners have been found utilizing other types of interventions as well. ELLs tutored using the Read Well program made significant gains in word identification, word attack skills, and passage fluency (Jitendra, Edwards, Starosta, Sacks, Jacobson, & Choutka, 2004). Cooperative peer-assisted reading strategies such as dyad reading may also help ELLs learn from one another in a social context, leading to improved reading performance (Almaguer, 2005). A study by Leafstedt, Richards, and Gerber (2004) found the middle- and high-performing students reached the “established” benchmark for phoneme segmentation fluency and “low risk” benchmark for nonsense word fluency using the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Kaminski & Good, 1996). All of these studies have indicated that bilingual students can respond to intervention.

Despite the majority of studies indicating bilingual students may respond to intervention similarly to their monolingual counterparts, some evidence exists that ELLs may struggle more. In a study by Haager and Windmueller (2001), large groups of ELL students fell below benchmark for oral reading fluency in first and second grade, despite growth across groups. Researchers suggested that these results may indicate that ELLs have difficulty assimilating English language knowledge to acquire fluency, but are able to assimilate the phonological components necessary to make progress on certain measures.
While most evidence indicates that ELLs may respond equally well to supplemental instruction or intervention as their English speaking counterparts, there is less research examining whether the language of the supplemental instruction should be in English or the student’s native language. A study by Vaughn, Linan-Thompson, Mathes, Cirino, Carlson, Pollard-Durodola and others (2006) concluded that supplemental intervention in Spanish (in addition to core instruction in Spanish) led to significant differences on Spanish outcomes measures, but not on English outcomes measures. These results provided no evidence that supplemental instruction or intervention needs to be provided in the native language, as is often indicated for core or initial instruction.

Research by Baker and Good (1995) found that oral reading fluency progress monitoring conducted in English as part of supplemental instruction or intervention functioned similarly with Spanish-speaking English speakers as well as English learners, supporting the use of English progress monitoring materials with ELLs.

Overall, research supports the use of supplemental instruction or intervention in improving English learners’ reading skills (Vaughn, et al., 2006). However, the degree to which a student is bilingual may have an impact on their academic performance or acquisition of a new language.

**Bilinguality**

Bilinguality has been defined as the degree to which a person is able to effectively use two languages. Cummins (1981) suggested that people who are proficient bilinguals are those who have well-developed high-level skills in two languages, and nonproficient bilinguals are those who have less than native-like ability in either of the two languages. That line of research also identified a third group of partial bilinguals, who have native-like ability in one language but not in the other.

Students may be classified on bilinguality according to different rating scales. In a study by Lindholm and Aclan (1991), students were categorized according to their bilingual proficiency using English and Spanish scores on the Student Oral Language Observation Matrix (SOLOM). This rating scale assesses oral language proficiency in the domains of comprehension, fluency, vocabulary, pronunciation and grammar. Scores are assigned by teachers after working with the students in a variety of different situations.
Scores in the Lindholm and Aclan study were then categorized as “high”, “medium” or “low” bilingual proficient based on the scores.

Pierce and O’Malley (1992) provided the Student Oral Proficiency Rating (SOPR), which is a matrix adapted from the SOLOM. This measure allows for rating students in the same domains of oral language proficiency as the SOLOM, but provides five different proficiency levels within each domain. Classification of students’ degree of bilinguality is important when considering the impact of bilinguality on academic performance and new language acquisition.

Research in bilinguality has indicated that the degree to which students are bilingual may affect their ability to learn another language. A study by Keshavarz and Astaneh (2004) compared the performance of Turkish-Persian bilinguals, Armenian-Persian bilinguals, and Persian monolinguals on a productive ability vocabulary test. Results showed that bilingual speakers of Persian performed better on the English vocabulary test than the Persian monolinguals, suggesting that students who are bilingual may be better able to learn and utilize a third language than students who are monolingual.

In terms of acquisition of English reading skills, research by Bialystok, McBride, and Luk (2005) found no overall effect of bilingualism on learning to read. Instead, students’ performance was dependent on the structure of the language, proficiency in that language, and instructional experiences with the writing system for that language. However, research has suggested that level of bilinguality may affect overall academic performance, and that a certain level of language proficiency may be necessary to allow beneficial aspects of being bilingual and influence cognitive growth (Cummins, 1987). Cummins (1987) explained that children who perform at the upper level of bilingual proficiency demonstrate rapid academic and cognitive development. According to this model, children whose proficiency in one or both languages is too low to enable them to interact through that language in the school environment could account for negative effects or lower academic functioning.

While research suggests that initial instruction for ELLs be administered in their native language, there is little research exploring which language supplemental instruction should be administered in. This study explored the differential effects of an
early literacy intervention administered in English to both bilingual and monolingual students. The research question addressed in this study was: Are there differential effects of early literacy intervention for bilingual versus monolingual children? Potential implications for practice and directions for future research were also explored. Given the relatively low numbers in each group (N=4), the purpose was to provide preliminary evidence regarding the research question.
Chapter 3

Method

Participants

The participants were six first-grade and two second-grade students enrolled in an after-school program at a community church, which provided programming for school-age children four days each week for two hours after school. Population demographics for the neighborhood and after-school program were approximately 74% Hispanic, 13% White Appalachian, and 13% African American.

The participant population included bilingual and monolingual students. The bilingual students included “Leon”, “Lily”, “Celia”, and “Jessica”. The monolingual students included “Caleb”, “David”, “Gage”, and “Nadia”.

Leon was an 8 year old Hispanic child in second grade who spoke English and Spanish fluently, could read some Spanish and some English, and wrote only in English. Lily was a 7 year old African American child in first grade who spoke English and Spanish fluently, but could read and write only in English. Celia was a 7 year old Hispanic child in first grade who spoke English and Spanish fluently, but could read and write only in English. Jessica was a 7 year old Hispanic child in first grade who spoke English and Spanish fluently, but could read and write only in English.

Caleb was a 7 year old African American child in first grade. David was an 8 year old African American child in second grade. Gage was a 7 year old Hispanic child in first grade. Nadia was a 7 year old Hispanic child in first grade. All of the monolingual students could speak, read and write in English only.

Examiners

The examiners were two school psychology graduate students who administered the early literacy intervention, select subtests from a commercially available norm-referenced achievement test, and a measure of bilinguality. The two examiners, along with one additional staff member, also administered weekly measures of progress monitoring. One examiner was bilingual in English and Spanish, while the other examiner and staff member were monolingual English-speakers.
Materials

Student Oral Proficiency Rating Scale. The examiners used an adapted form of the Student Oral Proficiency Rating (SOPR) scale to rate the participants’ level of bilinguality (see Appendix A). Participants were rated according to their level of proficiency in the domains of comprehension, fluency, vocabulary, pronunciation and grammar. Scores in each domain ranged from 1 to 5, where 1 represented no proficiency in that language and 5 represented proficiency approximating a native speaker in that language.

The SOPR is scored by assessing a student’s proficiency in each of five categories: comprehension, fluency, vocabulary, pronunciation, and grammar. A bilingual examiner conversed with each student in their native and second languages and assigned a level from 1-5 in each category, where “1” represents a low score, and “5” represents a high score. Each student’s levels were then added together to obtain a total score (with possible scores ranging from 5 to 25). Students whose total score was 20 or greater were labeled as bilingual. A score of 20 or greater indicated that the student earned a level 4 or 5 proficiency in each category (Pierce & O’Malley, 1992).

Paths to Achieving Literacy Success. Participants received supplemental instruction using the Teacher-Directed Paths to Achieving Literacy Success (PALS) (Mathes, Allor, Torgesen, & Allen, 2001). Participants received twice-weekly intervention in small groups of three. Teacher-Directed PALS consists of 57 lessons divided into three format guides: Lessons 1-15, Lessons 16-36, and Lessons 37-57. Each lesson focused on two routines: Sounds and Words, and Storing Sharing. Goals of the Sounds and Words routine included identifying letter-sound correspondences automatically, understanding that words are composed of individual sounds, blending sounds together into words, recognizing sight words, and integrating phonological knowledge into reading (Mathes, et al., 2001). Goals of the Story Sharing routine included increasing fluency and word recognition, increasing memory and sequencing skills, and knowledge of basic story structure (Mathes, et al., 2001). Students in this study received intervention using Lessons 1-15.
Dynamic Indicators of Basic Early Literacy Skills (DIBELS). DIBELS (6th edition; Kaminski & Good, 2002) was used to identify participants, as well as to monitor weekly progress. The following measures were administered at pre- and post-test, as well as on a weekly basis throughout baseline and intervention phases: Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency (NWF), and Oral Reading Fluency (ORF). Students were assessed using the level of materials corresponding to their grade level.

The Phoneme Segmentation Fluency (PSF) measure is an individually administered test of phonological awareness (Kaminski & Good, 1996). PSF measures a student’s ability to break three- and four-phoneme words into their individual phonemes. The examiner orally presents words to the student, who must then verbally produce the individual phonemes for each word. Scores are derived from the number of correct phonemes the student is able to produce in one minute. The PSF measure has been found to be a good predictor of later reading achievement (Kaminski & Good; Torgesen, Wagner & Rashotte, 1994).

The Nonsense Word Fluency (NWF) measure is an individually administered test of the alphabetic principle, which includes letter-sound correspondence and the ability to blend letters into words (Kaminski & Good, 1996). The student is given a sheet of randomly ordered Vowel-Consonant and Consonant-Vowel-Consonant nonsense words and is asked to verbally produce the individual letter sound for each letter or produce the whole nonsense word. Scores are derived from the number of correct letter sounds produced in one minute. NWF has been found to be a good predictor for later reading performance in native English speakers (Torgeson, Wagner, & Rashotte, 1994). A recent study by Vanderwood, Linklater & Healy (2008) demonstrated that the NWF measure was also a good predictor of later reading performance in ESL students. This study also validated the NWF measure as a screening measure and progress monitoring tool for ESL students.

The Oral Reading Fluency (ORF) measure is an individually administered test of accuracy and fluency with connected text, given at a student’s grade level. ORF measures a student’s ability to translate letters into sounds and word automatically, without conscious attention. Students are given a grade-level passage to read. Scores are derived from the correct number of words read in one minute. The ORF measure has been found
to be a valid and reliable measure of general reading proficiency (Good & Kaminski, 1996).

*Woodcock-Johnson Tests of Achievement-III.* The Passage Comprehension subtest from the *Woodcock-Johnson Tests of Achievement-III* (*WJ-III*; Woodcock, McGrew, & Mather, 2001) was administered pre- and post-intervention as an additional measure to demonstrate growth. Scores were reported as raw scores, and were used as an additional measure to compare growth from pre-test to post-test. The *WJ-III* subtests have been found to have good reliability and validity (Woodcock, McGrew & Mather).

**Design**

The effects of intervention were analyzed using post-hoc group comparisons. Pre- and post-test scores on each measure were examined between groups to summarize levels achieved by PALS instruction. Change or difference scores from pre- to post were examined as a measure of response to intervention. Due to the low number of participants, four in each group, these analyses were considered preliminary, and used to generate (rather than test) hypotheses for future studies.

**Procedures**

Each child received PALS lessons 1 -15 during 30-min small group instruction conducted twice per week. During baseline, weekly measures of PSF, NWF, and ORF were administered, along with a single administration of the *WJ-III* Comprehension subtest and the SOPR. During the next 8 to 15 weeks, the PALS lessons were conducted, while weekly measures continued. After lessons were completed, post-test administration was obtained for all measures except the SOPR.

Next, participants were assigned to one of two groups: monolingual or bilingual. To be classified as bilingual, participants had to receive ratings of 4 or 5 in each domain (total score of 20 or greater) on the adapted form of the SOPR scale. Participants were rated on their proficiency in both English and in Spanish. Four participants earned scores of 4 or higher in each domain, and were classified as bilingual. Bilingual participants earned total scores greater than 20 in both English and Spanish. Four participants earned scores lower than 4 in each domain on the Spanish version, and were classified as monolingual. All participants earned scores greater than 20 in English, indicating they were fluent English speakers (see Table 1).
Participants’ individual graphs demonstrating their response to intervention on the DIBELS progress monitoring measures were then compared. Individual and group differences were examined to compare pre- and post-test differences on the DIBELS measures and the *Woodcock-Johnson Tests of Achievement-III (WJ-III)* subtest.
Chapter 4

Results

The purpose of this study was to examine the response of both bilingual and monolingual students who were receiving a small-group reading intervention to determine if there were differential effects. The research question was: Are there differential effects of early literacy intervention for bilingual versus monolingual children?

Group mean differences for each measure, growth rates for the DIBELS measures, and group mean percentage differences for each measure were compared to determine if there were differential effects of the intervention for the bilingual versus the monolingual group. Results were analyzed using visual inspection to compare average group difference scores and average group percent growth across measures. Difference scores were calculated using the group means for each measure to obtain an average difference score. Difference scores were used instead of pre- and post-test scores because students started at different levels prior to intervention. Table 2 displays the difference scores, growth rates, and % difference scores for each group and measure. Performance levels for the four primary measures are also compared across groups in Figure 1.

On the Phoneme Segmentation Fluency (PSF) measure, the bilingual group gained an average of 26 phonemes from pre-test to post-test. The growth rate on the PSF measure for the bilingual group was +3.25/week. On the Nonsense Word Fluency (NWF) measure, the bilingual group gained an average of 76.25 correct letter sounds from pre-test to post-test. The growth rate on the NWF measure for the bilingual group was +9.53/week. On the Oral Reading Fluency (ORF) measure, the bilingual group gained an average of 42 correct words per minute from pre-test to post-test. The growth rate on the ORF measure for the bilingual group was +5.25/week. On the Passage Comprehension subtest of the WJ-III, the bilingual group gained an average of 5.5 points.

The monolingual group gained an average of 41.75 phonemes from pre-test to post-test on the PSF measure. The growth rate on the PSF measure for the monolingual group was +5.22/week. On the NWF measure, the monolingual group gained an average of 63 correct letter sounds from pre-test to post-test. The growth rate on the NWF
measure for the monolingual group was +7.88/week. On the ORF measure, the monolingual group gained an average of 30 correct words per minute from pre-test to post-test. The growth rate on the ORF measure for the monolingual group was +3.75/week. On the Passage Comprehension subtest of the WJ-III, the monolingual group gained an average of 7.5 points. However, the average difference score for the WJ-III measure was calculated using only two of the participants’ scores, as two participants moved prior to post-testing on this measure.

Differences between pre- and post- DIBELS measures for each group were also examined (see Figures 2-4). For the PSF measure, the bilingual group mean percentage increase was 36.5%, while the monolingual group mean percentage increase was 59.2%. The bilingual group pre-test mean was 45.25, and the post-test mean was 71.25. The monolingual group pre-test mean was 28.75, and the post-test mean was 70.5.

For the NWF measure, the bilingual group mean percentage increase was 66.2%, while the mean percentage increase for the monolingual group was 87.2%. The bilingual group pre-test mean was 39, and the post-test mean was 115.25. The monolingual group pre-test mean was 9.25, and the post-test mean was 72.25.

For the ORF measure, the mean percentage increase for the bilingual group was 73.4%, while the mean percentage increase for the monolingual group was 69.8%. The bilingual group pre-test mean was 15.25, and the post-test mean was 57.25. The monolingual group pre-test mean was 13, and the post-test mean was 43.

Overall, these data indicate that intense supplemental intervention was effective in improving three indicators of literacy on both groups. Dramatic improvements were observed on measures of phonemic awareness and oral reading skills, which are considered essential to reading competency (August & Shanahan, 2006). These effects did not appear to be sensitive to the child’s level of English proficiency. The bilingual group demonstrated larger “absolute” increases in two of three measures, and larger growth rates on two of three measures. The monolingual group, on the other hand, demonstrated a higher percentage of change (from baseline) on two of three measures. Thus, the bilingual group, which may be considered more at risk for poor educational outcomes (August & Shanahan), responded equally or better than the monolingual group.
Overall, the bilingual students demonstrated equivocal or greater response to the intervention than the monolingual students in this study. While there were some differences between groups in the response to intervention, the differences were not consistent across various measurement methods (e.g., level, growth, percentage), suggesting that bilingual students may respond equally well to supplemental intervention in English. On the NWF and ORF measure, the bilingual group demonstrated greater growth and achieved a greater post-test score than the monolingual group. There was no evidence in this study to suggest that bilingual students need supplemental intervention in their native language, as they responded as well as the monolingual students to intervention administered in English.

The results of this study support research which suggests that bilingual students vary in their response to intervention, as do their monolingual counterparts (Calhoon, Al Otaiba, Cihak, King, & Avalos, 2007; Richards, 2004; Vaughn, Linan-Thompson, & Hickman, 2003). These results also support research indicating that bilingual students respond equally well or better to supplemental instruction than monolingual students (Chiappe, Siegel, & Wade-Woolley, 2002; Gunn, Smolkowski, Biglan, & Black, 2002). While bilingual students may benefit from initial instruction which incorporates their native language (Rolstad, Mahoney, & Glass, 2005; Slavin & Cheung, 2005; Willig, 1985), they may not need supplemental intervention administered in their native language.

A study by Keshavarz & Astaneh (2004) suggested that bilinguality may have positive effects on students’ ability to learn another language; Turkish-Persian bilingual students in this study performed better on an English vocabulary test than Person monolinguals. The current study supports Keshavarz & Astaneh’s results.

Based on research which found that bilingual students may struggle more, particularly in reading (Haager & Windmueller, 2001), it may have been assumed that bilingual students would make less progress on their early literacy skills than the
monolingual students. However, the results of this study indicate that children fluent in two languages are no more likely to struggle than children who speak English only. However, in the current study, the bilingual students were highly proficient in both English and Spanish. They already spoke fluent English, which may explain results indicating that the bilingual students made progress at a level above or commensurate to their monolingual peers.

**Limitations**

The primary limitation of this study was the low number of participants. Because this intervention was administered at an after-school program with time constraints, only a few students could be included in this intensive intervention. These findings are preliminary and are intended to guide future research, rather than inform practice.

Another limitation is the post-hoc design – groups were not divided *a priori*, so definitive conclusions about cause and effect cannot be made. Participants in the bilingual and monolingual groups were not matched according to the same variables, such as age, gender, race, or pre-test DIBELS levels.

Because bilingual students in this study were fluent in speaking both English and Spanish, results should be interpreted cautiously. Their high level of proficiency in both languages may have allowed for greater growth than if they had been fluent only in Spanish.

**Future Research**

As a preliminary study, the most important contribution of this research is toward the development and evaluation of future research. Because the achievement gap for ELL children is larger than every other diversity category used in education, including that of children with disabilities (Planty, Hussar, Provasnik, Kena, Dinkes, Kewal Ramani, Kemp, Kridl, & Livingston 2008) definitive conclusions from research are needed regarding the best ways to address the learning needs of these children.

One important recommendation for future studies is to replicate the current study using a larger group, and a true experimental design. The current study examined the effects of the reading intervention on a small number of participants. If no differences between groups on key indicators such as growth and percentage change are observed...
using a larger sample, then supplemental literacy intervention in English may be a viable component of service delivery systems for both monolingual and bilingual children.

Research examining monolingual versus bilingual student response to other supplemental, Tier 2 intervention strategies is needed. Research has examined the effects of the Reading Mastery (Engelmann & Bruner, 1986; Jitendra, et al., 2004) and Corrective Reading (Engelmann, Carnine, & Johnson, 1988) on Hispanic and Non-Hispanic students’ decoding skills (Gunn, et al., 2002). Other research-based, Tier 2 intervention strategies may also allow bilingual students to experience equal or greater growth in early literacy skills as their English speaking counterparts.

This research examined the differential effects of a reading intervention program administered in English for bilingual versus monolingual students. Research has suggested that there is a limit to the degree of transfer of content across languages; students who are instructed in their native language may only transfer some of the content learned to English, and only if they have the English proficiency to do so (Lindholm & Aclan, 1991). A recommendation for future studies is to examine if students who receive supplemental intervention administered in their native language demonstrate greater growth on English measures as students who receive supplemental intervention in English only.

Another recommendation for future studies is to examine whether the degree of bilinguality affects student response to supplemental intervention. Some research suggests that the degree of bilingual proficiency can affect academic achievement in reading and mathematics in both Spanish and English (Lindholm & Aclan, 1991). In this study, participants were categorized into two groups only: bilingual or monolingual. Future studies which differentiate the degree of bilingual proficiency may reveal greater differential effects of supplemental intervention administered in English.

Another important area for future studies involves the maintenance of early literacy and reading fluency skills post-intervention. The current study examined the effects of the intervention during and immediately after the intervention period. If growth achieved during supplemental literacy intervention in English could be maintained long-term, further support for the use of such interventions with bilingual students would be provided.
An equally important area for future research is to determine, among a smaller group of children who do not respond to general instruction or small-group supplemental intervention, whether alternative interventions and measurement systems are needed at the individual (or Tier 3) level.

**Conclusion**

The bilingual students in this study responded to the intervention as well as their monolingual peers, showing equal or greater growth in their reading skills. While bilingual students may need differentiated initial instruction which incorporates their native language, this study provides support for supplemental instruction or intervention administered in English.
References


Gunn, B., Biglan, A., Smolkowski, K., & Ary, D. (2000). The efficacy of supplemental...
instruction in decoding skills for Hispanic and non-Hispanic students in early elementary school. *Journal of Special Education, 34*, 90-112.


Lindholm, K., & Aclan, Z. (1991). Bilingual proficiency as a bridge to academic


<table>
<thead>
<tr>
<th>Name</th>
<th>Grade</th>
<th>SOPR Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caleb</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>David</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Gage</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Nadia</td>
<td>1</td>
<td>6</td>
</tr>
</tbody>
</table>

**Monolingual Group**

**Bilingual Group**

<table>
<thead>
<tr>
<th>Name</th>
<th>Grade</th>
<th>SOPR Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leon</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>Lily</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>Celia</td>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>Jessica</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>Indicator</td>
<td>Difference Scores</td>
<td>Bilingual (N=4)</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>PSF</td>
<td>+26</td>
<td>+42</td>
</tr>
<tr>
<td>NWF</td>
<td>+76</td>
<td>+63</td>
</tr>
<tr>
<td>ORF</td>
<td>+42</td>
<td>+30</td>
</tr>
<tr>
<td>WJ</td>
<td>+5.5</td>
<td>+7.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Growth Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSF</td>
</tr>
<tr>
<td>NWF</td>
</tr>
<tr>
<td>ORF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentage Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSF</td>
</tr>
<tr>
<td>NWF</td>
</tr>
<tr>
<td>ORF</td>
</tr>
</tbody>
</table>
Figure 1. Bilingual vs. Monolingual Group Mean Difference Scores

Figure 2. PSF Measure: Bilingual vs. Monolingual Groups
Figure 3. NWF Measure: Bilingual vs. Monolingual Groups

Figure 4. ORF Measure: Bilingual vs. Monolingual Groups
Appendix A

**Student Oral Proficiency Rating**

*Adapted from the Student Oral Language Observation Matrix (SOLOM) developed by the San Jose Unified School District*

<table>
<thead>
<tr>
<th>Total Score:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student’s Name:</strong></td>
<td><strong>Grade:</strong></td>
</tr>
<tr>
<td><strong>School:</strong></td>
<td><strong>City:</strong></td>
</tr>
<tr>
<td><strong>Rated By:</strong></td>
<td><strong>Language Observed:</strong></td>
</tr>
</tbody>
</table>

**Directions:** For each of the 5 categories below at the left, mark an “X” across the level that best describes the student’s abilities.

**CATEGORY: Comprehensive**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Cannot understand even simple conversation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2</td>
<td>Has great difficulty following what is said. Can comprehend only “social conversation” spoken slowly and with frequent repetitions</td>
</tr>
<tr>
<td>Level 3</td>
<td>Understands most of what is said at slower-than-normal speed with repetitions</td>
</tr>
<tr>
<td>Level 4</td>
<td>Understands nearly everything at normal speed although occasional repetition may be necessary</td>
</tr>
<tr>
<td>Level 5</td>
<td>Understands everyday conversation and normal classroom discussions without difficulty</td>
</tr>
</tbody>
</table>

**CATEGORY: Fluency**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Speech is so halting and fragmentary as to make conversation virtually impossible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2</td>
<td>Usually hesitant; often forced into silence by language limitations</td>
</tr>
<tr>
<td>Level 3</td>
<td>Speech in everyday communication and classroom discussion is frequently disrupted by the student’s search for the correct manner of expression</td>
</tr>
<tr>
<td>Level 4</td>
<td>Speech in everyday communication and classroom discussion is generally fluent, with occasional lapses while the student searches for the correct manner of expression</td>
</tr>
<tr>
<td>Level 5</td>
<td>Speech in everyday conversation and in classroom discussions is fluent and effortless, approximating that of a native speaker</td>
</tr>
</tbody>
</table>

**CATEGORY: Vocabulary**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Vocabulary limitations are so extreme as to make conversation virtually impossible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2</td>
<td>Misuse of words and very limited vocabulary make comprehension quite difficult</td>
</tr>
<tr>
<td>Level 3</td>
<td>Frequently uses the wrong words; conversation somewhat limited because of inadequate vocabulary</td>
</tr>
<tr>
<td>Level 4</td>
<td>Occasionally uses inappropriate terms or much rephrase ideas because of</td>
</tr>
<tr>
<td>inadequate vocabulary</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Level 5</strong> Use of vocabulary and idioms approximates that of a native speaker</td>
<td></td>
</tr>
</tbody>
</table>

Appendix A (cont.)

**CATEGORY: Pronunciation**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Pronunciation problems so severe as to make speech virtually unintelligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2</td>
<td>Very hard to understand because of pronunciation problems. Must frequently repeat in order to be understood</td>
</tr>
<tr>
<td>Level 3</td>
<td>Pronunciation problems necessitate concentration on the part of the listener and occasionally lead to misunderstanding</td>
</tr>
<tr>
<td>Level 4</td>
<td>Always intelligible, though one is conscious of a definite accent and occasional inappropriate intonation patterns</td>
</tr>
<tr>
<td>Level 5</td>
<td>Pronunciation and intonation approximate a native speaker’s</td>
</tr>
</tbody>
</table>

**CATEGORY: Grammar**

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Errors in grammar and word order so severe as to make speech virtually unintelligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2</td>
<td>Grammar and word order errors make comprehension difficult. Must often rephrase or restrict what is said to basic patterns</td>
</tr>
<tr>
<td>Level 3</td>
<td>Makes frequent errors of grammar and word order which occasionally obscure meaning</td>
</tr>
<tr>
<td>Level 4</td>
<td>Occasionally make grammatical or word order errors which do not obscure meaning</td>
</tr>
<tr>
<td>Level 5</td>
<td>Grammatical usage and word order approximate a native speaker’s</td>
</tr>
</tbody>
</table>