PHONEMIC AWARENESS AND ITS IMPACT ON EMERGING SPANISH LITERACY IN BILINGUAL CLASSROOMS

A Dissertation

by

AMBER BRADSHAW PENN

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2010

Major Subject: Educational Psychology

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ABSTRACT

Phonemic Awareness and Its Impact on Emerging Spanish Literacy

in Bilingual Classrooms. (August 2010)

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This quantitative study has been derived from a five-year federal experimental research project entitled English and Literacy Acquisition (ELLA- R305P030032) which targeted Spanish-speaking English Language Learners (ELLs) receiving services in English immersion and bilingual program models. The purpose of this study was to investigate the predictive power of Spanish phonemic awareness in kindergarten on Spanish reading ability in first grade among Spanish-speaking ELLs. Fifty-five students from typical practice bilingual classrooms were included in this study.

Phonemic awareness skills were measured using blending phonemes and segmenting words, two subtests from Comprehensive Test of Phonological Processing (C-TOPP). Reading ability was measured using letter-word identification and passage comprehension, two subtests from Woodcock Language Proficiency Battery-Revised (WLPB-R). Data of phonemic awareness skills were collected at the beginning and end of kindergarten and data of reading ability were collected at the beginning and end of

first grade. Correlation analysis and multiple regression analysis were performed to address the research questions.

The data from this study present a picture of a predictive power of phonemic awareness skills on reading comprehension in Spanish. Results from this study suggest that both skill areas of phonemic awareness in kindergarten have a moderate predictive effect on reading ability at the beginning of first grade. However, phonemic awareness skills in kindergarten did not show a statistically significant relationship to Spanish literacy at the end of first grade. Theoretical and practical implications were discussed.

DEDICATION

To all of my past, current and future students and to all who are passionate about languages and bilingual education

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I would like to thank my committee chairs, Dr. Lara –Alecio for his understanding, commitment to work with me, patience and guidance over the last few years and Dr. Fuhui Tong for her everlasting support, time, and guidance throughout this process. I would like to also thank my committee members, Dr. Pollard-Durodola and Dr. Alonzo for their guidance and support throughout the course of this research. A special thanks to Janie Kemp, for her help and support throughout this process.

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Thanks also go to my parents for instilling in me an incredible work ethic, an appreciation of the importance of education, and the tenacity to always strive to obtain my goals and aspirations. Every day I attempt to better myself and learn something original because of your example. Thanks also to my siblings, Ashley and Brian, for setting an example of dedication and intelligence in all that you do, and for supporting me in this journey to challenge myself.

Finally, thanks to my husband for his unwavering patience and love. Thank you for supporting me in every aspect of my endeavor and encouraging me when the path seemed never-ending. And to my children, Harrison and Kenley, for all the moments missed, I hope this endeavor will one day serve as inspiration for you to develop your full potential in any aspect that you choose to pursue.

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CHAPTER I

INTRODUCTION

In the state of Texas, many students are from diverse linguistic backgrounds. The population of Spanish speakers is growing rapidly within both the state and the public education system (Texas Education Agency [TEA], 2009a). In the year 2000, the Hispanic population constituted 40% of students attending Texas public schools. In the 2008-2009 school year, it was reported that 50.2% of the first grade student population in Texas was Hispanic (Kennedy, 2009). It was also reported that many Hispanic students within the state of Texas are English language learners (ELLs), 17% statewide in PK-12 (TEA, 2009a). This population of ELLs in public schools continues to increase; as it is estimated that by 2040, the number of students speaking a language other than English will more than triple (Moreira, 2006).

Unfortunately, students who enter school as limited English proficient (LEP) are more likely to be at- risk for school failure (August & Hakuta, 1997). These students score substantially lower than other language minority students in schools of equal poverty levels in both reading and mathematics (Moss & Puma, 1995). The academic hardship of Latino students is reflected in our society. Latinos, for example earn the lowest median wage in California and only 8% of Latinos have a bachelor's degree or higher.

This dissertation follows the style of *Journal of Educational Psychology*.

Furthermore, less than 1% of Latinos classified are among the richest Americans or found on the board of directors of Fortune 1000 companies (Lopez, Ramirez, & Rochin, 1999). As it is stated by sociologist Gutiérrez "Latinos are concentrated at the bottom of the socioeconomic ladder. Very few have managed to ascend into the ranks of the rich" (2004, p. 279). This observation leads to question; what is occurring that is creating this inequity amongst the Latino population?

The monumental No Child Left Behind Act (NCLB) (2002) has insisted that the growing minority population meet the same state academic standards as native English-speaking children. Furthermore, federal legislation has mandated the annual reports of academic progress for each individual student to his or her respective state.

Therefore, to accommodate the needs of ELLs and to provide equity education has become the biggest challenge to the U.S. public school system. Meanwhile, the best way to teach language minority students the skills required for scholastic success has become a controversial topic. Within the past twenty years, educators and researchers have experimented with a variety of language models: transitional bilingual education, maintenance bilingual education, two-way immersion, developmental bilingual education, dual instruction, sheltered English and English as a second language. Extensive research has been done on the success of these bilingual programs and aggregated data shows the strength of maintenance and dual language programs (Engle, 1975; Dulay & Burt, 1978; Troike, 1978; Baker & de Kanter, 1981; Ramirez, 1992; Medina & Escamilla, 1992; Thomas & Collier, 2002). Although the best method for

educating second language learners is still a polemic debate; the research focus has begun to shift to effective practices within programs.

The critical role of reading skills to academic success necessitates the study and careful practice of literacy instruction. This literature review will focus on phonological and phonemic awareness and the effective practices necessary for reading success. This study will then investigate reading readiness skills and the importance of phonemic and syllabic awareness in meeting the needs of Spanish speaking second language learners.

Definition of Terms

L1

L1 refers to native language. In this study, L1 is Spanish.

L2

L2 refers to second language. In this study, L2 is English.

Latino

Latino refers to being of Hispanic ethnicity and descent.

English Language Learners

English language learners (ELLs) are students beginning to learn English or who have not demonstrated proficiency in English (Padrón & Waxman, 1999).

Typical Transitional Bilingual Education (TBE) Model

A model established by a school district in which students' first language and English are used in some combination for instruction, and the first language serves as a temporary bridge to instruction in English (Lara-Alecio, Irby & Meyer, 2001). In this study, the students' first language is Spanish. Therefore, Spanish is used to promote

concept development including literacy and reading abilities while English instruction and acquisition increases as the students' grade levels progress. The goal is the full mastery of literacy and language in both Spanish and English.

Statement of the Problem

In the year 2000, Hispanic students constituted 40% of the students attending public schools in Texas. This number has grown by 55% in the past twelve years (TEA, 2009a). The majority of Hispanic students entering Texas schools are also English language learners (ELLs). The standardized test of the Texas Assessment of Knowledge and Skills (TAKS) test shows that ELLs are lagging behind their peers; in some academic areas, the gap can be as large as a forty point discrepancy. Meanwhile, the graduation rate for seniors is 39% for ELLs, 68% for Latinos, 70% for African Americans and 88% for White students (TEA, 2009a). Results from the TAKS test show the same disturbing trend. According to the 2009 test results, Hispanic and ELL students are not performing at a level comparable to their native English speaking peers, especially in the areas or reading and math (TEA, 2009a). Of tenth grade ELL 48% passed the language arts section of the 2009 TAKS while 86% of Hispanic students passed, 95% of White students passed, 87% of African American passed and the state passing average was 90% (TEA, 2009a).

For more than thirty years, researchers have tried to address this achievement gap (Engle, 1975; Dulay & Burt, 1978; Troike, 1978; Baker & de Kanter, 1981; Ramirez, 1992; Thomas & Collier, 2002). Over time, empirical evidence is culminating that in order for ELLs to close the achievement gap in English; their primary years of schooling

should be conducted in their native language. This foundational beginning fosters the development and transfer of skills to the target language, English (Cummins, 1979). Research has shown that ELLs need to experience full development in their L1 to better understand the cognitive demands of the secondary grades in English (Thomas & Collier, 2002). In Texas, transitional bilingual education has aimed to instruct students in their L1, which is predominantly Spanish. The instruction of concepts in Spanish begins at the pre-kindergarten level and phases out as the students become more proficient in the English language. Therefore, instruction for literacy is taught in Spanish and students begin reading and decoding processes in their native language.

Extensive research has been done on effective reading practices in English and in Spanish. The gathered empirical evidence shows a correlation between English pre-literacy skills and reading development (National Reading Panel [NRP], 2000). An important skill crucial to reading success in English is phonological and phonemic awareness (NRP, 2000). Students with poor phonological skills are more likely to struggle in reading as they progress through school (Chiappe, Siegel, & Wade-Wooley, 2002). However, relatively little is known about the nature of Spanish phonological awareness tasks, especially compared with the body of research on English phonological awareness tasks (see Denton, Hasbrouck, Weaver, & Riccio, 2000).

In studies on the relationship between pre-literacy skills and reading achievement in Spanish, the findings have shown discrepancies on whether the impact of phonological awareness in as crucial as it is in English. The investigation of this relationship has found confounding factors and yielded inconsistent results (Durgunoglu,

Nagy, & Hancin-Blatt, 1993; Carrillo 1994; Manrique & Signorini, 1994; Bravo-Valdivieso, 1995; Jiménez & González, 2000; Riccio, Amando, Jiménez, Hasbrouck, Imhoff, & Denton, 2001; Alvarez, Correira, & Perea, 2004; Alonzo, Gonzalez, & Tindal, 2008). A significant percentage of these results, however, indicate that phonemic awareness has a predictive power on reading ability but that the magnitude of such prediction decreases as the child progresses throughout school (Carillo, 1994).

In opposition, other researchers point out that Spanish, a transparent and orthographically shallow language, necessitates a syllabic understanding of language rather than a phonemic one (Signorini, 1998; Jiménez & González, 2000; Alvarez, Correira, & Perea, 2004; Alonzo, Gonzalez, & Tindal, 2008).

Therefore, because of the debate on syllabic and phonemic importance in Spanish, the limited research on predictive power of phonemic awareness in Spanish and the inconsistencies found regarding the importance of phonemic awareness, this present study aims to investigate the relationship between Spanish phonemic awareness and Spanish reading ability.

Purpose of the Study

This quantitative study derives from a five-year federal experimental research project entitled English and Literacy Acquisition (ELLA) (R305P030032) targeting approximately 800 Spanish-speaking ELLs receiving services in four program models: (a) typical /control transitional bilingual education (TBE), which represents the typical practice in the school district; (b) enhanced/experimental TBE, which represents the intervention of the project; (c) typical/control structure English immersion (SEI), which

represents the typical practice of the district and (d) enhanced/experimental SEI programs, which represents the intervention of the project. This current study will only use the data from students in the typical TBE classrooms. The purpose of this study was to investigate the predictive power of Spanish phonemic awareness during the beginning and end of kindergarten on Spanish reading ability during the beginning and end of first grade among Spanish ELLs. These students are followed throughout their kindergarten and first grade school years. Students' phonemic awareness skills were measured at the beginning and end of their kindergarten year. These phonemic abilities in kindergarten were then evaluated along with the students' reading ability (letter-word identification and passage comprehension) at beginning and end of first grade.

Research Questions

This study consists of two research questions:

1. a) Do phonemic awareness abilities at the beginning of kindergarten predict reading ability at the beginning of first grade? b) Do phonemic awareness abilities at the beginning of kindergarten predict reading ability at the end of first grade?
2. a) Do phonemic awareness abilities at the end of kindergarten predict reading ability at the beginning of first grade? b) Do phonemic awareness abilities at the end of kindergarten predict reading ability at the end of first grade?

Significance of Study

This study is of significance for three reasons. First, as outlined in the statement of the problem, there is not sufficient empirical evidence on the effect of phonological and phonemic awareness in Spanish on overall reading ability in Spanish. Moreover, there is lack of clarity as to which phonemic and phonological awareness skills are important in Spanish. This study's results should contribute to the body of existing literature on phonological and phonemic awareness skills in Spanish and could assist schools in making informed decisions regarding Spanish literacy. Additionally, this study aims to examine the predictive power of phonemic awareness skills in Spanish. This investigation at the two different time periods will provide data on phonemic awareness skills essential for pre-literacy and will aide literacy acquisition for students at the decoding level. This also may assist schools in making informed decisions on Spanish literacy instruction regarding when and which skills should be included in a whole literacy approach.

Last, quality pre-schooling and intensive early intervention are required to ensure success for all students (Slavin & Madden, 1999). This early intervention is critical for ELLs who are not only seeking academic success but are concurrently acquiring the English language. This study will present the implications of phonemic awareness in a typical bilingual classroom, which is a prevalent language learning program for ELLs throughout the state of Texas. Results may be used to inform school district as to which phonological and phonemic skills should be implemented into a reading literacy program

in Spanish. It may also provide practical implications for future implementation into a reading curricular resource.

Delimitations

This study does not have a treatment group since data were previously collected during a five-year federal grant. The project's enhanced models involved phonological awareness enhancement activities in English, however, it did not do so in Spanish- this study's intended topic of investigation. The phonological and phonemic awareness activities were those regularly implemented by the teachers and those that followed the typical practice of the districts' bilingual classroom. Furthermore, the types of phonemic awareness skills provided in the data are limited due to data collected for the federal grant. There are two subcategories of phonemic awareness which delimits the information collected. Moreover, the phonemic awareness and reading scores are available for two years and such delimitation is associated with the available data.

Organization of the Study

Chapter I of this study included definition of terms, a statement of the problem, the purpose of the study, research questions, the significance of the study and delimitations.

Chapter II of this study will include: an introduction, a literature review on phonological and phonemic awareness, phonemic awareness in English, phonemic awareness in Spanish, a review of effective literacy instruction with emphasis on syllabic and phonemic instruction and a chapter summary.

Chapter III of this study will include an introduction, sample, setting, research design, instrumentation, data collection, data analysis, and a summary.

Chapter IV of this study will report the data analysis and summary.

Chapter V of this study will present a discussion of findings, limitations, recommendations, implications and conclusions.

CHAPTER II

REVIEW OF THE LITERATURE

When educators discuss effective reading programs for monolingual English and Spanish-speaking children, phonological and phonemic awareness receive much attention. Despite the controversy regarding the most effective instructional practices for early literacy acquisition, substantial evidence has accumulated on the process of reading acquisition and instructional approaches in both English (National Reading Panel (NRP), 2000) and Spanish (August & Shanahan, 2006).

The goal of this chapter is to present an extensive literature review in the area of phonological awareness, with a particular focus on phonemic awareness, a sub skill of phonological awareness. Moreover, the review will examine the connection of phonological and phonemic awareness to Spanish literacy and Spanish reading ability. Findings are summarized from two research syntheses and significant empirical studies conducted with monolingual English and Spanish speakers.

Phonological Awareness

Phonological awareness constitutes the ability to segment sounds used in speech (International Reading Association, 1998) which may include attention to manipulation of words, syllables, and phonemes that are heard and spoken (Denton, Hasbrouck, Weaver, & Riccio 2000). Over the years, research has proven that phonological awareness tends to develop from larger to smaller units of sound (i.e., from word to syllable to phoneme) (Adams, 1990; Wagner, et al., 1997; Wagner, 1988). This ordered

development reflects an increasing awareness of shorter and more abstract segments of speech (Wagner et al., 1997) and this progression appears to be universal across alphabetic languages (Cisero & Royer, 1995; Durgunoglu & Oney, 2000; Signorini, 1998; Jiménez & González, 2000; Alvarez, Correira, & Perea, 2004; Alonzo, Gonzalez, & Tindal, 2008). Yet despite researchers' knowledge of how phonological awareness development, results regarding the measurement of this process are inconclusive. (Adams, 1990; Stahl & Murray, 1994).

Extensive research has been conducted regarding the nature of phonological awareness and its development (NRP, 2000). Moreover, much research has been done to investigate the relationship of phonological awareness to reading development and the specific phonological awareness skills a child must have in order to read (for example, see Signorini, 1998; Durgunoglu & Oney, 2000; Jiménez & González, 2000; Alvarez, Correira, & Perea, 2004; Alonzo, Gonzalez, & Tindal, 2008). From this research, it has been found that the ability to manipulate onsets and rimes and the ability to isolate beginning and final phonemes are critical phonemic awareness abilities (NRP, 2000).

Phonemic awareness is a sub skill of phonological awareness defined as the ability to hear and manipulate the smallest sounds (i.e., phonemes) in spoken words. It also involves the understanding that words and syllables are formed by a sequence of speech sounds (Yopp, 1992). Instruction in phonemic awareness (PA) involves teaching children to identify and manipulate phonemes in spoken syllables, as well as blend or segment sounds into words (NRP, 2000). According to the NRP, there are six areas commonly used to assess and/or instruct students' phonemic awareness abilities:

phoneme isolation, phoneme identity, phoneme categorization, phoneme blending, phoneme segmentation and phoneme deletion.

This study and literature review will investigate phonemic awareness and its relationship to overall literacy with a specific investigation of Spanish phonemic awareness. Phonemic awareness was selected for this study's investigation for two reasons. First, correlational studies have identified phonemic awareness and letter knowledge as most successful indicators of children's reading aptitude during their first two years of school (NRP, 2000). As a result, these studies have generated much interest in PA amongst schools, teachers and publishers. Second, experimental studies have evaluated the effectiveness of PA instruction in facilitating reading acquisition (Durgunoglu & Oney, 2000; Signorini, 1998; Jiménez & González, 2000; Alvarez, Correira, & Perea, 2004). The literature review will examine findings from research syntheses and extant studies.

Phonemic Awareness in English

Converging evidence from a research synthesis (NRP, 2000) and extant studies confirm the importance of phonemic awareness development in English as a foundational skill for future reading success. For example, a synthesis conducted by the National Reading Panel (1998), evaluated six important components of reading instruction and development, one of which was alphabetics with a focus on the importance of phonemic awareness. The NRP evaluated over 1,962 articles that were associated with phonological and phonemic awareness. The "effect size" statistic was used to evaluate the treatment group compared to the control group. The overall findings

examined whether phonological awareness instruction with a focus on phonemic awareness, was significantly better than alternative forms of training students in reading and spelling instruction. The results were positive. The overall effect size of phonological and phonemic awareness outcomes was large, 0.86. These findings illustrate the effectiveness of teaching children to manipulate phonemes in words across all literacy domains and outcomes (NRP, 2000). The results also indicated that phonological and phonemic awareness instruction produced positive effects on both word reading and psuedoword reading. Additionally, phonological and phonemic awareness training was successful in boosting reading comprehension, although the effect size was smaller than for word reading (NRP, 2000). The panel also discovered that phonemic awareness exhibited a much larger effect size on preschool literacy outcomes than on literacy outcomes of students in other grade levels. Finally, results indicated that phonological and phonemic awareness had significant effects on children learning to read whether in English or another language (NRP, 2000).

Evaluative Studies

Several studies have outlined the implications of evaluating the results of successfully taught phonemic awareness skills. Ball and Blachman (1991) found that instruction in phoneme segmentation, along with letter-sound instruction, created greater gains in early reading and spelling abilities than letter-sound instruction alone. They also state that phonemic awareness skill instruction was particularly effective when it included explicit direction in applying PA skills to actual reading activities (Cummingham, 1990). Meanwhile, Chiappe, Siegel and Wade-Wooley (2002) found

that first grade English-language learners designated as reading disabled scored lower on phonological awareness tasks than English language learners classified as average readers.

For English, researchers have suggested that phonemic awareness is a strong predictor of early reading success (Lyon, 1995) because phonemic awareness is believed to have a direct correlation to the necessary mechanics for decoding. Malicky and Norman (1999) have noted that, once the association between phonology and letter-sound correspondence is made, reading advances quickly. Phonemic awareness also helps children to understand the alphabetic principle. It has also been argued that a reciprocal relationship exists between phonemic awareness and reading (Lyon, 1995). Therefore, not only is phonemic awareness important to English, but also to the success of reading in other alphabetic languages, such as Spanish (Carillo, 1994).

It is important to mention that the desired end result of students participating in bilingual programs in Texas is high academic and linguistic achievement in English. This transition is an evident goal of the education system as bilingual programs are mandated only through the sixth grade, instruction then occurs in English only for secondary grade levels. Students entering school as English language learners often achieve literacy through their first language, Spanish in the context of this study. Therefore, a close evaluation must ensure that initial literacy instruction is effective, research based, occurs in the student’s first language and will ultimately lead to high literacy abilities in English.

Spanish Phonological and Phonemic Awareness

As previously stated, phonemic awareness is a sub skill of phonological awareness in alphabetic languages. Because phonological awareness is a prominent measured skill in progress monitoring systems for early English literacy development, it seems logical to consider instruments that produce valid and reliable measurements of early Spanish literacy. Therefore, it is pertinent to investigate the importance of phonological and phonemic awareness in relation to Spanish literacy. Studies conducted by Stahl and Murray (1994), Wagner, et al. (1997), and Hogan, Catts, and Little (2005) support the notion that phonological awareness predicts advanced reading abilities. For example, in the study by Wagner and his colleagues, they concluded that phonological awareness measures in the primary grades offered a small but statistically significant amount of information to the prediction of future word reading beyond that provided by a measure of current word reading. Similarly in the study by Hogan, Catts, and Little, the results indicated that phonological awareness in kindergarten predicted word reading in second grade.

Spanish phonological awareness appears to develop in stages: (a) the ability to discriminate between similarities and differences of sounds in words (necessary for understanding speech), (b) a sensitivity to rhyme and alliteration, (c) an awareness of separate syllables in words, (d) the ability to isolate onsets and rimes within words or syllables, and (e) the awareness of individual phonemes (Denton, Hasbrouck, Weaver, & Riccio 2000). Tasks that require the manipulation of syllables appear to be easier for Spanish- speaking children than those which require the manipulation of phonemes

(Signorini, 1998). Therefore, the development of phonemic awareness skills is supported by reading instruction, and likely to contribute overall reading development.

In Spanish, studies have demonstrated differentiated successes across the types of phonological awareness skills. For example, in Spanish, Cisero and Royer (1995) found that students performed best on rhyme tasks, followed by initial phoneme tasks and the poorest on ending phoneme tasks. This pattern has implications for early literacy assessment and instruction in Spanish in that the establishment and understanding of the progression of phonological development can help identify students with potential reading problems. Phonological awareness skills in both Spanish and English seem to develop first for syllables, followed by onsets and rimes, and finally phonemes (Adams, 1990; Anthony et al., 2002; Lonigan, et al., 1998; Lonigan, Burgess, & Anthony, 2000; Carrillo, 1994; Cisero & Royer, 1995; Denton, Hasbrouck, Weaver, & Riccio, 2000; Stanovich, Cunningham, & Cramer, 1984). This is the common progression for phonological skill development. Yet while important, this progression of skill acquisition does not necessarily measure Spanish phonological awareness in terms of predictive validity related to Spanish reading outcomes. Considering, the indication that phonemic awareness skills develop last in PA progression, an investigation is necessary to evaluate which areas of phonological and phonemic awareness are related to reading outcomes in Spanish. In the following sections, research in the areas of Spanish phonological awareness will be reviewed. A primary focus will be on Spanish phonemic awareness and its predictive relation to reading outcomes in Spanish.

Spanish phonological awareness is expressed in terms of skills that identify and manipulate linguistic units such as syllables, phonemes, onsets and rimes. In the following sections, three subcategories of phonological awareness will be defined: syllabic awareness, onset/rime awareness and phonemic awareness.

Syllabic awareness skills include detecting, isolating, blending, segmenting, and manipulating spoken syllables. Each syllable contains a unit of pronunciation with one vowel sound, with or without consonants and forms a word part or whole word (Jewell & Abate, 2001). In Spanish, the syllable is more prominent than in English due to the consistency of the orthographic patterns in the language (Manrique & Signorini, 1994). In Spanish, for example, letters generally represent one phoneme or sound with the exception of the letters “c” and “g” which follow a pattern that can commonly be identified. However, more complex syllabic rules do exist with the consideration of diphthongs and vowel combinations.

Onset-rime and awareness is the ability to segment single syllable words at an intrasyllabic level (Mercier Smith, 2005). An onset is the beginning consonant or consonant cluster in a monosyllable word. For example, in Spanish the word “gol”, the onset would be the sound /g/. The term “rime” refers to the collection of sounds that occur after the onset in a one-syllable word that begins with a vowel. For example, in the Spanish word “gol” the rime is /ol/ (Mercier Smith, 2005).

Phonemic awareness is the third subcategory of phonological awareness. Phonemes are the smallest units of sound in a word. To illustrate, the phonemes in the Spanish word “pato” are /p/ /a/ /t/ /o/. An initial phoneme can be either a consonant or a

vowel sound. Phonemic awareness can be represented as blending and segmenting phonemes into words and syllables.

In order to better understand which phonological and phonemic awareness activities are important in Spanish, there must be attention drawn to the debate of syllabic and phonemic instruction in the Spanish language.

Spanish Syllable and Spanish Phoneme Instruction

Another difference that occurs in Spanish and English phonological and phonemic awareness instruction is that there is much debate between the importance of syllabic and phonemic instruction in Spanish. For example, phoneme segmentation has been shown to be predictive of reading outcomes in English (Adams, 1990; Snow, Burns, & Griffin, 1998; NRP, 2000); however, different skills may be a stronger predictive outcome in Spanish. Syllabic awareness has been hypothesized to be more predictive of reading outcomes than phonemic awareness in Spanish for first grade students (Jiménez & González, 2000). This assumption drives the direction of instruction in many bilingual classrooms today. Because Spanish follows a regular patter of syllabic within words, the assumption is that the focus should be syllabic rather than phonemic. The phonemic awareness compared to syllabic awareness is a unique aspect of Spanish literacy also requiring further investigation. A study by Alvarez, Correira and Perea (2004) strengthened the argument that Spanish syllables are phonological units critical to word recognition. Another recent study by Alonzo, Gonzalez and Tindal (2008) tested 100 native English speakers in first and second grade in Oregon. The findings showed

that a measure of syllable sounds was a better predictor of word and sentence fluency than those of letter sounds and phoneme segments.

In English, letters can represent multiple phonemes. However, Spanish possesses a predominately shallow or transparent orthography with generally regular and consistent mapping between graphemes and phonemes (Cuetos & Labos, 2001; Jimenez, 1997). In most instances, vowels have only one grapheme-phoneme correspondence (Gottardo, 2002). The majority of Spanish consonants have only pronunciation for reading purposes (Gottardo, 2002) and when Spanish consonants do not have more than one pronunciation, they follow a regular and predictable rule within the context of syllabic structure (Jiménez, 1997; Jiménez & González, 2000). The Spanish language is relatively predictable and orthographically shallow in comparison to English. However, learning to read the Spanish language is not simple. Although Spanish and English differ in aspects of morphology, orthography, and phonology, the similarities between the two languages suggest that there are similar components of literacy between both languages. Phonemic awareness is likely to be a core component of Spanish early literacy; however empirical evidence is needed to fully support this assumption.

Therefore, the remaining part of this literature review will focus on the importance of phonemic awareness in Spanish. In order to understand the significance of phonemic awareness, an in-depth analysis will be provided on the predictive power of Spanish phonemic abilities on Spanish reading ability through an investigation of current research synthesis and extant studies.

Synthesis of Findings

In 2002, the National Literacy Panel on Language-Minority Children and Youth synthesized research findings on the development of literacy in English language learners. In this synthesis, there was evidence that (a) phonological and phonemic abilities have a significant impact on reading acquisition and comprehension with ELLs (August & Shanahan, 2006), and (b) there is a strong relationship between monolingual children's phonological and phonemic awareness and their eventual success in reading (Snow, Burns, & Griffin, 1998; August & Shanahan, 2006). Moreover, longitudinal studies with monolinguals (Spanish and English) have confirmed the persistence of reading disabilities coinciding with deficits of phonological skills (Fletcher, et.al., 1994; August & Shanahan, 2006).

Evaluative Studies

Correlational and longitudinal studies have demonstrated a positive relationship between phonological and phonemic awareness and reading capacity in monolingual Spanish speakers (Gonzalez, 1996; Jimenez, 1997; Defior, 1996). Phonemic awareness interventions with monolingual Spanish speakers have also proved successful for improving their reading (Defior, 1996). Denton, Hasbrouck, Weaver, and Riccio (2000) found converging evidence supporting the importance of Spanish phonological and phonemic awareness abilities to Spanish reading outcomes.

In Spanish, phonemic awareness is closely related to word recognition (Durgunoglu, Nagy, & Hancin-Bhatt, 1993). Studies performed by educational researchers found that students who perform well on phoneme segmentation tasks were

also the strongest readers (Carillo, 1994) and students who performed poorly on phonological awareness tasks were also likely to continue to struggle in reading and have poor reading outcomes (Bravo-Validivieso, 1995).

Correspondingly, several studies have found that Spanish-speaking students with strong phonemic awareness skills are generally successful in reading and spelling (Bravo-Valdivieso, 1995), therefore, confirming the predictive validity of phonemic awareness skills for reading abilities in upper grade levels. Specifically, Bravo-Valdivieso found that the best predictor of reading achievement in the older children was their ability to decode words within the first year of reading instruction. He also discovered that a child's level of phonological awareness is a better predictor of success in learning to read than IQ, general language proficiency, or other traditional measures of reading readiness. Similarly, Jiménez and González (2000) studied phonological and phonemic awareness and reading acquisition in Spanish and suggested that phonemic awareness was strongly related to reading skills at the end of the first grade. Another study conducted by Riccio, Amando, Jiménez, Hasbrouck, Imhoff, and Denton (2001) found that phonological and phonemic awareness in Spanish were moderately related with Spanish oral reading fluency with correlations ranging from .41 to .43. Furthermore, Denton, Hasbrouck, Weaver, and Riccio (2000) found that students who have poor phonemic awareness or difficulty learning to decode words in the early years of school may develop severe reading difficulties in later years.

It has been found that relations in kindergarten between phonemic tasks and reading ability were moderately strong (r=.40) (Carillo, 1994). Another study, by

Dugunoglu, Nagy, and Hancin-Blatt (1993), measured first-grade Spanish speaking students' reading ability against their phoneme segmentation, blending and matching. Results were interpreted to suggest that phonemic awareness in Spanish was "closely related" to Spanish word reading; however, the correlation of .29 was not statistically significant.

There is still debate in the literature as to whether phonological and phonemic awareness predict reading skills in Spanish. Manrique and Signorini (1994), in their comparison of Spanish-speaking skilled and struggling readers, found that even weak first-grade readers in Argentina performed well on a phoneme counting task (tapping a pencil for each phoneme heard in a word). The authors concluded that there was no relationship between word reading and phonemic awareness activities. In another study conducted by Signorini (1997), it was concluded that even complex phonemic awareness tasks are only moderately related to first graders ability to read a list of words. Although, there appears to be a reciprocal relationship between Spanish-language phonemic awareness and literacy development, some studies have found that even poor Spanish-language readers can have high phonemic awareness (Manrique & Signorini, 1994; Signorini, 1997). Moreover, in the study by Carillo (1994), there is lack of significant correlation between the power of phonemic awareness tasks and decoding skills. These results, therefore, indicated a relation between early phonemic awareness and decoding skills in kindergarten but not in first grade. A possible explanation for this could be that once students receive explicit instruction in phonemic skills such as

blending and segmenting sounds and letter-sound identification, the predictive ability of phonological awareness related to overall reading ability decreases.

Finally, Denton, Hasbrouck, Weaver, and Riccio (2000) cautioned that the literature available on Spanish phonemic awareness lacks sufficient psychometric validity and reliability studies to validate the tests it has performed. Thus, these authors argued the need for well tested and technically adequate instruments for the assessment of phonological awareness in Spanish-speaking children.

Summary

In this chapter, an extensive literature review was presented in the area of phonological and phonemic awareness and its connection to Spanish literacy and overall reading ability. It also reviewed effective program models to serve English language learners.

In English, converging evidence supports five core components of early literacy: (a) phonological awareness, (b) the alphabetic principle, (c) accuracy and fluency in connected text, (d) vocabulary development, and (e) comprehension (NRP, 2000; Snow, Burns, & Griffin, 1998). These components are considered foundational skills that are linked to overall reading outcomes. Each component is considered to be a necessary, prerequisite skill to successful reading development. The content of the literature review concerning literacy in English has been well-established and explored for decades. However, the review of literature for Spanish literacy is still developing as bilingual programs are finally beginning to focus on biliteracy and bilingualism as an end result. It should be mentioned however, that Spanish and English are both alphabetic languages,

sharing 95% of the same phonemes and the components of literacy appear to be relevant to reading development in both languages. However, empirical evidence is needed to fully support this assumption.

For English literacy, phonological awareness has been investigated in order to determine which skills are important for literacy acquisition. In Spanish, the essentiality of phonemic awareness skills is not as obvious. Spanish phonological awareness skills develop in order from syllables, to riming and lastly phonemic awareness (Denton, Hasbrouck, Weaver, & Riccio, 2000), possibly due to the transparent nature of the Spanish language (Cuetos & Labos, 2001; Jimenez, 1997). Phonemic awareness is the last to develop and should be further investigated to evaluate if these skills are related to Spanish reading ability.

The literature review shows that there has been much research on the area of Spanish phonemic awareness skills and the components of overall reading success in both Spanish and English. From the literature, this study has established that phonological awareness tends to develop from larger to smaller units of sound, and phonological awareness tasks vary in difficulty, depending upon the unit of sound they assess. As discussed previously, in Spanish, syllabic understanding is developed before phonemic understanding with regards to phonological understanding and there is debate on whether syllabic or phonemic instruction is more beneficial to Spanish literacy. This literature review also discussed the development of phonemic awareness skills supported by reading instruction. It covered the apparent reciprocal relationship between Spanish-language phonemic awareness and literacy development, although some studies have

found that even poor Spanish-language readers may have high phonemic awareness (Manrique & Signorini, 1994; Signorini, 1997). However, there is still not empirical evidence to support this assumption and more research should be completed to determine which phonological and phonemic awareness skills are predictive of overall reading success. The development and importance or phonemic and phonological skills in English is evident; however, the evidence of the importance of these phonemic abilities in Spanish is limited, and even less is know among bilingual learners who are native Spanish speakers simultaneously learning English. Therefore, this study will also further explore phonemic awareness abilities within bilingual classrooms and their relation to Spanish literacy.

Evidently, the progression of phonological awareness skills and the development of the different components of reading (fluency, comprehension, decoding, etc.) should be further investigated. Moreover, this investigation should consider evaluating these skills in the students' first language. Research has indicated that a strong development of first language reading skills leads to a strong development of second language skills. Cummins (1993) explained this as a transactional relationship between the two languages, an interdependence hypothesis, which states that there is a transfer of knowledge, skills, and processes across languages and that the development of the primary language facilitates the acquisition of skills in a second language. Further research determining the strengths of reading development in a student's first language will aid the development of knowledge about L2 acquisition. Consequently, an effective

program in a student's first language will lead to higher development of reading skills in the students' second language.

Although phonological processing ability remains relatively constant over time, phonological and phonemic awareness skills can be taught to students. Explicit instruction in phonological and phonemic awareness is particularly important for children with specific reading problems, who characteristically demonstrate deficits in this area. Therefore, the utmost importance should be given to literacy instruction in Spanish. Bilingual programs have begun to focus on biliteracy and importance should be given to the best instructional practices for literacy in Spanish.

Researchers have suggested that there is a relationship between Spanish language phonemic awareness and successful literacy development; however, this needs to be further investigated. There is research in English (Bradley & Bryant, 1983; Foorman, Francis, Novy, & Liberman, 1991; Wagner, 1988) and in German (Näslund, 1990) indicating that children's levels of phonemic awareness not only predict their future reading achievement, but actually cause them to be successful or unsuccessful in learning to read.

Phonological awareness and been shown to be a predictor of first-language reading achievement in children in English. The research has begun to develop for reading achievement in Spanish but further investigation is required to determine which phonological and/or phonemic awareness tasks are important in the development of Spanish reading. Phonological awareness tasks vary in difficulty, depending upon the unit of sound they assess. As discussed previously, syllabic understanding is developed

before phonemic understanding with regards to phonological understanding. Furthermore, there is debate on whether syllabic or phonemic instruction is more beneficial to Spanish literacy. It is important for research to further investigate if phonemic awareness in Spanish is as important as it is in English literacy development. There is a limited research base on predictive power of PA on reading among Spanish speakers who are also learning English. In addition, the methodology of bilingual research has been scrutinized along with the testing materials employed to evaluate phonemic awareness in Spanish (Denton, Hasbrouck, Weaver, & Riccio, 2000). Therefore, this current study will employ methodological methods that are sound in validity and reliability.

CHAPTER III

METHODOLOGY

The purpose of this study was to investigate the predictive power of Spanish phonemic awareness in kindergarten on Spanish reading ability in first grade among Spanish speaking ELLs. These students were tested at the beginning and end of kindergarten for phonemic awareness skills. They were then tested for reading abilities at the beginning and end of first grade. Therefore, the data were analyzed to investigate the predictive role of phonemic awareness at two different time points (beginning and end of kindergarten) on reading ability at two time points (beginning and end of first grade).

In this chapter, I outline the methodological design of my study. It includes sampling and research design, context of the study, instrumentation, intervention procedures, data collection and data analysis.

Sampling and Research Design

The present study was derived from English Language and Literacy Acquisition (ELLA)[1], a five year federal project targeting approximately 800 native Spanish – speaking ELLs in a Texas urban school district. The purpose of this large scale project was to implement a thorough, longitudinal evaluation of alternative

[1]Data for this dissertation were pulled from a bank of data sets provided under the U.S. Department of Education, Institution of Education Sciences federal grant, Project ELLA, R305P030032.

instructional modes for native Spanish-speaking students acquiring English language and literacy. All the students participating in Project ELLA were identified by the participating district as being limited English proficient and each had a Home Language Survey indicating Spanish as the primary language for that student.

This federal project researchers evaluated students participating in the structured English immersion and Transitional Bilingual Education (TBE) practice. The selected students were also only those who had been enrolled continuously and remained in their initial placement program from kindergarten until the end of first grade (2005-2006 school year). After attrition rate was taken into consideration from the original sample of 191 Spanish speaking students in the control or typical TBE classroom, 125 of the original students remained and were present for the end of first grade. From this a power analysis was performed to determine the number of students needed in this study, based on the criteria of significance level at .05, power at .90, and effect size of .2, resulting in a required sample size of 55 (Faul, Erdfelder, Lang, & Buchner, 2007). Therefore, 55 students from the TBE-typical practice classrooms were randomly selected.

Context of the Study

The present study was conducted in a large urban school district in the state of Texas. The district provides language services to its 31% of students labeled as limited English proficient. Eighty percent of the school district is identified as economically disadvantaged. At the time of the study, three programs existed for serving the ELL population: structured English immersion, transitional bilingual program and two-way immersion program. The district was originally chosen by the researchers because of its

consistency in program philosophy and implementation, the accessibility of SEI and TBE programs within the district and the extensive experience with serving the ELL population (Tong, Lara-Alecio, Irby, Mathes, & Kwok, 2008).

Instrumentation

Phonological Processing

The Comprehensive Test of Phonological Processing (CTOPP) (Torgesen, Wagner, & Rashotte, 1999) is a published, norm-referenced test with sufficient reliability and validity to support its use as a measure of phonological processing in English. The CTOPP has an internal consistency reliability estimate of the composite score range from .83 (Phonological Memory) to .96 (Phonological Awareness at ages 5-6 years), with an overall median content sampling reliability estimate of .90 (Hintze, Ryan, & Stoner, 2003). The test contains the following subtests: Elision, Blending Words, Sound Matching, Memory for Digits, Nonword Repetition, Rapid Color Naming, Rapid Digit Naming, Rapid Letter Naming, Rapid Object Naming, Blending Nonwords, Phoneme Reversal, Segmenting Words, and Segmenting Nonwords.

The TOPP-S is the Spanish version of the CTOPP and was used within this project. Rasch analysis yielded a reliability coefficient of .83 for the entire test of the STOPP. The Spanish tasks were created as developmentally comparable, linguistically appropriate measures of Spanish-speaking children’s ability to recognize and manipulate the sounds of their language (Branum-Martin, et al., 2006). Spanish items match the English items for difficulty with regard to number of phonemes and syllables, complexity of phoneme combinations, and the locus of the phoneme manipulation

(beginning, ending, or middle) for those items requiring manipulations, such as deletion (Branum-Martin, et.al, 2006). The Spanish PA tests comprised the same tasks in the same order with the same number of items as the English tests (CTOPP): blending nonwords, segmenting, and phoneme elision. The only scoring difference is that the ceiling rule was four items in Spanish, whereas it is three items in English (Branum-Martin, et.al, 2006).

For the purpose of this study, scores from the subtests of Segmenting Words and Blending Phonemes into Words will be used to assess phonemic awareness. The segmenting word section requires the examinee to identify the separate phonemes that make up a target word. For example, the word *mi* in Spanish would need to be separated into the phonemes *m-i.* An example from the blending phonemes section of the test would consist of a broken word "*pié-zas,"* and the student would need to blend the phonemes into the word, "*piezas."* Although standard scores and percentile ranks are available in CTOPP-Spanish, raw scores were used for the purpose of comparing the students' results with the Spanish version of the Woodcock-Munoz (introduced below). The blending phoneme section into words (phonological awareness construct) is a 20-item subtest that involves listening to sounds produced on an audiocassette recording and then combining the phonemic sounds of strings into words. Raw scores will be used for analysis. Because both of these activities take place on the phonemic level, both measure the students' phonemic awareness abilities.

Reading Ability

The Spanish Woodcock Language Proficiency Battery-Revised (WLPB-R) (Woodcock & Munoz-Sandoval, 1995) was used to measure students' overall reading ability. The Spanish version of the test includes reading subtests that evaluate various reading components. It was normed on a sample of 3,911 native Spanish-speaking individuals from 22 countries, including 1,325 from the United States and 1,512 from Mexico, who were close to monolingual Spanish speakers; median coefficient a values ranged from .84 to .92 across all age ranges and from .68 to .95 at ages 6 and 9 (Woodcock & Munoz-Sandoval, 1995). In this project the subtests of passage comprehension and letter word identification were given.

Letter Word Identification. In this measure participants are required to identify a letter from a series of options and then proceed into word identification. The words progressively become more challenging as the test-taker advances through the test. The raw score represents the highest number of words the participant could read correctly (0–40). The technical manual reports the mean split half reliability coefficients between .90 and .96 for the English version, a parallel form of the Spanish version.

Passage Comprehension. The Passage Comprehension measure was used to assess reading comprehension. The technical manual claims a .91 reliability coefficient for ages that are typically associated with grade 3 and a .95 reliability coefficient for ages that are associated with grade 1. The passage comprehension subtest asks the test-taker to correctly identify the picture that correctly represents the spoken phrase. The test

then progresses into the test taker reading a short passage and identifying the missing word in the story. Each item is coded as a 0 for incorrect and a 1 for correct with a ceiling and basal created for each subtest.

Transitional Bilingual Education – Typical (TBE-T)

The typical Transitional Bilingual Education classroom in this district begins with an 80:20 (80% Spanish instruction, 20% English instruction) model in kindergarten and progresses to a 50:50 model by third grade (with instruction being 70:30 in first grade and 60:40 in second grade). Spanish instruction is still present in fourth-sixth grades but typically is only delivered during one or two content area classes. The goal of kindergarten is to focus on English oral language development during the 45-minute English-as-second-language (ESL) block. Over time, this develops into full English academic instruction in the areas of science and social studies by the third grade. The goal of the transitional bilingual program is to transition the students into academic performance in English.

In the urban district where data were collected, transitional bilingual education has been implemented since the late 1970s. It is offered at all elementary and intermediate schools in the district. Various instructional models are used in each classroom. These models are geared towards increasing comprehension, fluency, writing development and content area mastery. Examples include leveled reading books, phonics materials, “Reader’s Theater,” skills practice, and software. The Spanish literacy instruction also follows the “Estrellita program,” which teaches reading through syllabic recognition and mastery along with guided reading in Spanish. Phonemic awareness in

Spanish is also taught by the "Estrellita" program, which focuses on teaching students how to blend syllables together. In the grades pre-kindergarten through second grade the amount of time spent in Spanish language arts is 90 minutes. In third through fifth grade, this language arts block is transitioned to English. Materials are available in both English and Spanish. The goal of the program is to transition students from Spanish to English in a gradual manner where they may exit the program no later than 5th grade. It is important to note that these practices are the typical practices of the district and variability might occur amongst campuses and classrooms.

Research Questions

This study consists of two research questions:

1. a) Do phonemic awareness abilities at the beginning of kindergarten predict reading ability at the beginning of first grade? b) Do phonemic awareness abilities at the beginning of kindergarten predict reading ability at the end of first grade?
2. a) Do phonemic awareness abilities at the end of kindergarten predict reading ability at the beginning of first grade? b) Do phonemic awareness abilities at the end of kindergarten predict reading ability at the end of first grade?

Data Collection

Scores of the TOPP-S were collected at the beginning of kindergarten (Fall 2004) and end of first grade (Spring 2006). Scores of the WLPB-R were collected at the beginning (Fall 2005) and end of first grade (Spring 2006). Trained testers or paraprofessionals administered each of the tests. Data capture was completed by Tele-

form software which allows for hand-printed, limited entry and bubbled data fields, eliminating the need for complete manual data entry. This process facilitates the building of such a large database.

Data Analysis

To answer research question 1 *a) Do phonemic awareness abilities at the beginning of kindergarten predict reading ability at the beginning of first grade? b) Do phonemic awareness abilities at the beginning of kindergarten predict reading ability at the end of first grade?,* a correlation analysis and regression analysis were utilized to determine the relation between the two variables. The significance level was set at α =.05. The determination of the predictive relationship between the independent variable of phonemic awareness (with sub skills of blending phonemes and segmenting words) and the dependent variable of reading ability (letter- word identification and passage comprehension) were evaluated.

To answer research question 2, *a) Do phonemic awareness abilities at the end of kindergarten predict reading ability at the beginning of first grade? b) Do phonemic awareness abilities at the end of kindergarten predict reading ability at the end of first grade?,* a correlation analysis and regression analysis were utilized to determine the relation between the two variables. The significance level was set at α=.05. The determination of the predictive relationship between the independent variable of phonemic awareness (with sub skills of blending phonemes and segmenting words) and the dependent variable of reading ability (letter word identification and passage

comprehension) were evaluated. Analyses were based on scores from each of the measurements in phonemic awareness and reading ability.

CHAPTER IV

DATA ANALYSIS

This chapter reports the statistical findings from the current study. Descriptive statistics are provided as well as inferential statistics including the variables blending phonemes and segmenting words for issues of correlation and regression analyses. Research question 1 evaluates the predictive role of phonemic awareness (blending phonemes and segmenting words) at the beginning of kindergarten on reading ability (letter word identification and passage comprehension) at the beginning and end of first grade. Research question 2 evaluates the predictive role of phonemic awareness abilities at the end of kindergarten on reading ability skills at the beginning and end of first grade.

Research Question #1

Question 1A

Do phonemic awareness abilities at the beginning of kindergarten predict reading ability at the beginning of first grade?

The descriptive statistics for phonemic awareness (blending phonemes and segmenting words) in kindergarten and reading ability (letter-word identification) at the beginning of first grade are listed in Table 1. Fifty-five students were included in this study.

Table 1 *Descriptive Statistics of PA (beginning of K) and Reading Ability (beginning of first grade)*

Subtests	Mean	SD
BP1	5.93	5.783
SW1	2.18	4.559
LWI3	419.42	34.150
PC3	425.04	29.170

Note: n=55. PA= phonemic awareness. BP= blending phonemes. SW= segmenting words. PC= passage comprehension. LWI=letter word identification. 1=data collected in fall 2004. 3=data collected in fall of 2005.

To answer the question as whether there is statistically significant prediction of phonemic awareness at the beginning of kindergarten (blending phonemes and segmenting words) on reading ability at the beginning of first grade, correlation and regression analyses were preformed. First, a Pearson correlation with the independent variable of phonemic awareness and the dependent variable of reading ability in first grade are presented in Table 2.

In Table 2, the independent variable of blending phonemes and dependent variables of letter word identification and passage comprehension shows moderate and positive correlation with a magnitude of .428 and .337, respectively. In addition, the correlation between the independent variable of segmenting words and the dependent

variables of letter word identification and passage comprehension also shows a significant moderate positive correlation of .370 and .317, respectively.

Table 2 *Pearson Correlation of Predictive PA (beginning of K) on Reading Ability (beginning of first grade)*

Phonemic Awareness	Reading Ability	
	LWI3	PC3
BP1	.428*	.337*
SW1	.370*	.317*

Note. N=55; * p <.05. ***p <.001. BP= blending phonemes. PA= phonemic awareness. SW= segmenting words. LWI=letter word identification 1=data collected in fall 2004. 3=data collected in fall of 2005.

Second, multiple regression analysis was performed to answer question 1A. To investigate the unique role of blending phonemes and segmenting words skills, two regression models were established for the dependent variables of letter word identification and passage comprehension respectively. The *p* values for the regression coefficients are .001 for blending phonemes and .005 for segmenting words, both of which are below .05, a value inside the variable level set by the researcher. In addition, the adjusted (R^2) effect size is .183 for BP on LWI, and .120 for SW on LWI, which is medium in magnitude according to Cohen's (1988) benchmark. Further *p* values for the regression coefficients are .012 for blending phonemes and .018 for segmenting words,

both which are below .05, a value inside the variable level set by the researcher. The adjusted R^2 effect size is .113 for BP on PC and .101 for SW on PC, which is small to medium in magnitude according to Cohen's benchmark. Results are presented in Table 3. The regression analysis is also visually presented in Figures 1-4.

Table 3 *Regression Analysis Summary for PA (beginning of K) and Reading Ability (beginning of first grade)*

Letter Word Identification							
PA	R	R^2	Beta	t	df1	df2	Sig. F Change
BP	.428	.183	.428	3.449	1	53	.001*
SW	.370	.137	.370	2.896	1	53	.005*
Passage Comprehension							
PA	R	R^2	Beta	t	df1	df2	Sig. F Change
BP	.337	.113	.337	2.604	1	53	.012*
SW	.317	.101	.317	2.435	1	53	.018*

Note. n=55. *p<.05. ***p<.001. PA=Phonemic Awareness. BP=Blending Phonemes. SW=Segmenting Words.

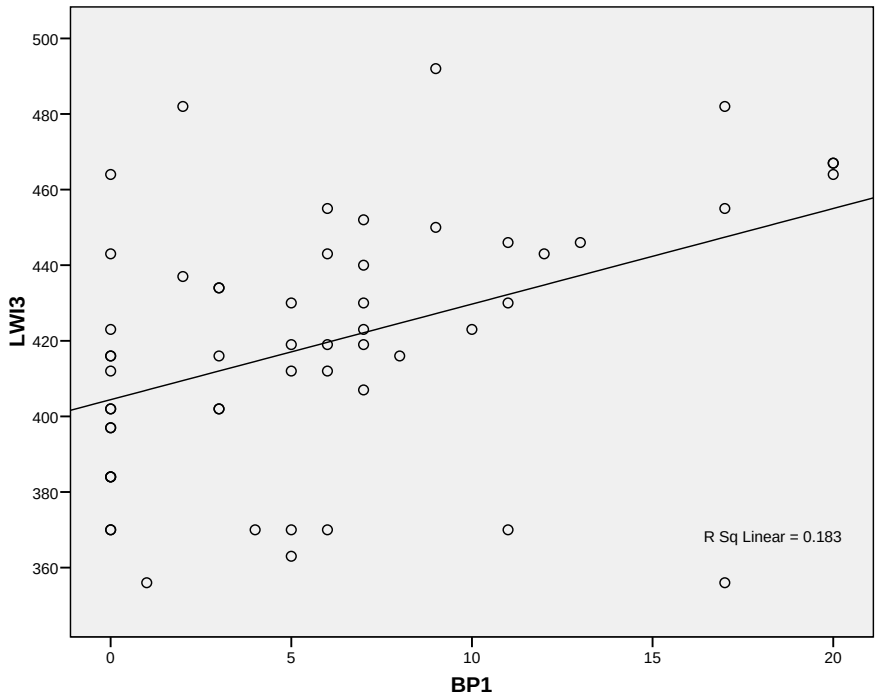

Figure 1 *Regression Model of BP (beginning of K) and LWI (beginning of first grade)*

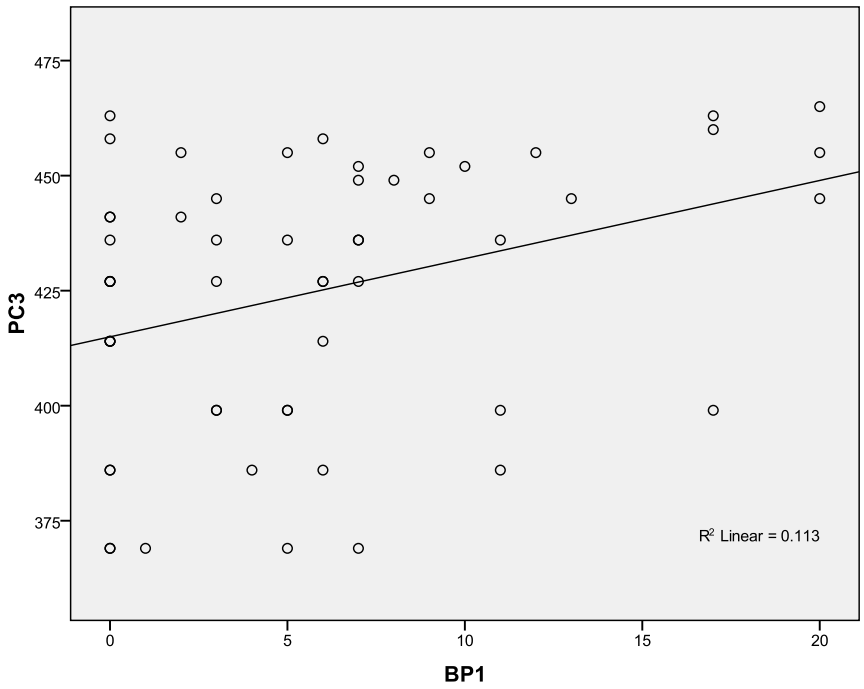

Figure 2 *Regression Model of BP (beginning of K) and PC (beginning of first)*

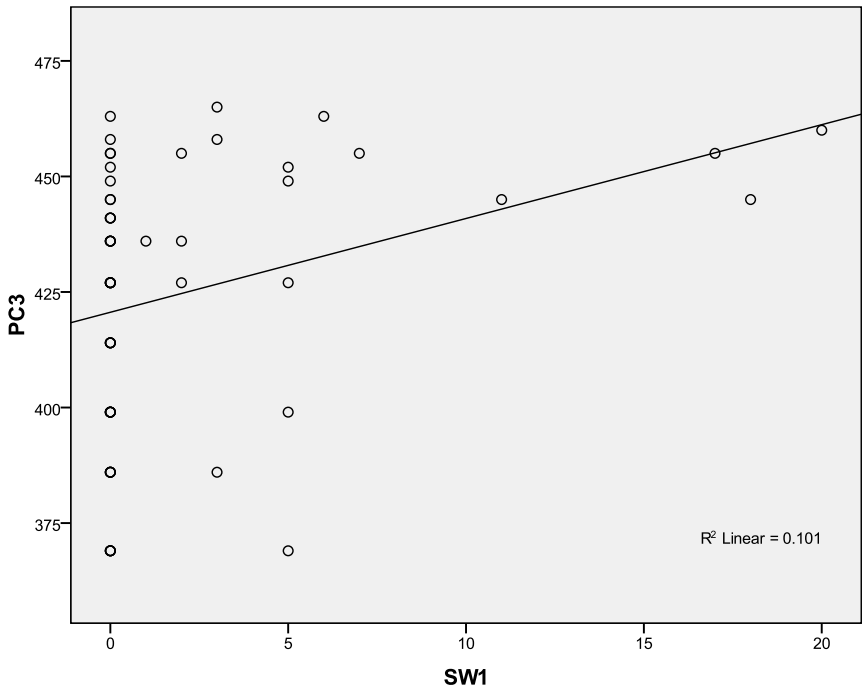

Figure 3 *Regression Model of SW (beginning of K) and PC (beginning of first)*

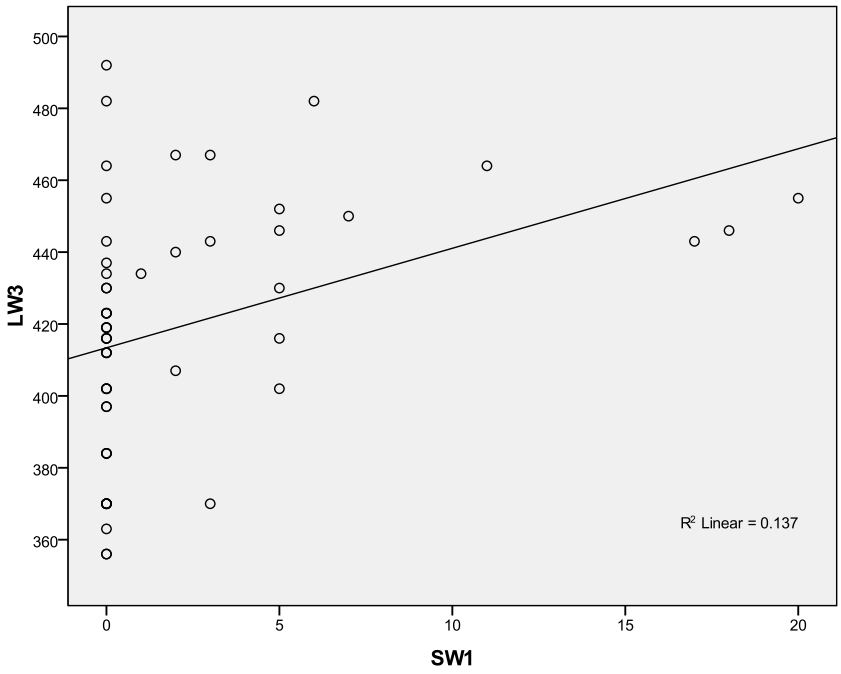

Figure 4 *Regression Model of SW (beginning of K) and LWI (beginning of first)*

Question 1B

Do phonemic awareness abilities at the beginning of kindergarten predict reading ability at the end of first grade?

The same data analysis strategy is provided to answer question 1B, which addressed the predictive role of phonemic awareness (blending phonemes and segmenting words) at the beginning of kindergarten on reading ability at the end of first grade. Descriptive statistics are listed in Table 4.

Table 4 *Descriptive Statistics of Predictive PA (beginning of K) and Reading Ability (end of first grade)*

Subtests	Mean	SD
LWI4	476.71	51.862
BP1	5.93	5.783
PC4	425.75	31.398
SW1	2.18	4.559

Note: PA= phonemic awareness. BP= blending phonemes. SW= segmenting words. PC= passage comprehension. LWI=letter word identification 1=data collected in fall 2004. 4=data collected in spring of 2006.

To answer question 1B as whether there is statistically significant prediction of phonemic awareness at the beginning of kindergarten on reading ability at the end of first grade correlation and regression analyses were performed. First, Pearson correlation is presented in Table 5.

The Pearson correlation shows there is no statistically significant prediction of phonemic awareness on reading ability. According to the data, the sub skills of blending phonemes and segmenting words are not correlated to letter word identification or passage comprehension at the end of first grade. Neither *p* value of Pearson r between sub skill of PA and reading abilities falls below the pre-determined level.

Table 5 *Pearson Correlation of Predictive PA (beginning of K) on Reading Ability (end of first grade)*

Phonemic Awareness	Reading Ability	
	LWI4	PC4
BP1	.138	.149
SW1	-.017	.061

Note. N=55; * p <.05. ***p <.001. BP= blending phonemes. PA= Phonemic Awareness. SW= segmenting words. LWI=Letter Word identification 1=data collected in fall 2004. 4=data collected in spring of 2006.

The multiple regression analysis results are presented in Table 6. For phonemic awareness, both variables show not to be statistically significant with the *p* values above .05. The adjusted R^2 effect size is small for phonemic awareness and reading ability, with .019 and .000 on letter word identification and .022 and .004 on passage comprehension.

In summary, phonemic awareness in kindergarten has a predictive positive relationship to reading ability at the beginning of first grade with a medium to large effect size. Among these correlations, blending phonemes has a stronger relationship with letter word identification.

Table 6 *Regression Analysis Model for PA (beginning of K) and Reading Ability (end of first grade)*

Letter Word Identification							
PA	R	R^2	Beta	t	df1	df2	Sig. F Change
BP	.138	.019	.138	1.011	1	53	.317
SW	.017	.000	-.017	-.127	1	53	.900
Passage Comprehension							
PA	R	R^2	Beta	t	df1	df2	Sig. F Change
BP	.149	.022	.149	1.099	1	53	.277
SW	.061	.004	.061	.443	1	53	.660

Note. N=55; * p <.05. ***p <.001. BP=Blending Phonemes. SW=Segmenting Words. PA=Phonemic Awareness.

The data analysis from question 1B shows that no significant relationship exists between phonemic awareness abilities at the beginning of kindergarten and reading abilities at the end of first grade.

Research Question #2

Question 2A

Do phonemic awareness abilities at the end of kindergarten predict reading ability at the beginning of first grade?

The descriptive statistics for phonemic awareness at the end of kindergarten and reading abilities at the beginning of first grade are listed in Table 7.

Table 7 *Descriptive Statistics of PA (end of K) and Reading Ability (beginning of first grade)*

Subtests	Mean	SD
LWI3	419.42	34.150
BP2	11.75	4.592
PC3	425.04	29.170
SW2	9.58	6.874

Note: PA= phonemic awareness. BP= blending phonemes. SW= segmenting words. PC= passage comprehension. LWI=letter word identification. 2=data collected in spring 2005. 3=data collected in fall of 2005

To answer the question as whether there is statistically significant prediction of phonemic awareness at the end of kindergarten (blending phonemes and segmenting words) on reading abilities (letter word identification and passage comprehension) at the beginning of first grade correlation and regression analyses were performed. The independent variable of phonemic awareness and the dependent variable of reading ability in first grade are analyzed in Table 8. The Pearson correlation is presented for the two variables.

In Table 8, the Pearson correlation between the independent variables (blending phonemes and segmenting words) and dependent variables (letter word identification and passage comprehension) shows a moderate and positive correlation. Segmenting words show to have a moderate correlation with letter word identification (.402) and

passage comprehension (.478). Both of these values are statistically significant with a *p* value of .001. Blending phonemes also show to have a moderate correlation with letter word identification (.430) and passage comprehension (.310). These values are also statistically significant and below the .05 *p* value level.

Table 8 *Correlations of Predictive PA (end of K) on Reading Ability (beginning of first grade)*

Phonemic Awareness	Reading Ability	
	LWI3	PC3
BP2	.430*	.310*
SW2	.402*	.478***

Note. N=55; * p <.05. ***p <.001. BP= blending phonemes. PA= Phonemic Awareness. RA= Reading Ability. SW= segmenting words. BP= Blending Phonemes. PC= Passage Comprehension. LWI=Letter Word identification. 2=data collected in spring of 2005. 3=data collected in fall of 2005.

Multiple regression analysis was performed to answer question 2A. To investigate the unique role of blending phonemes and segmenting words skills, two regression models were established for the dependent variables of letter word identification and passage comprehension. Results are presented in Table 9. The *p* values for the regression coefficients are .001 for blending phonemes and .002 for segmenting words, both of which are below .05, a value inside the variable level set by the researcher. In addition, the adjusted R^2 effect size for PA on LWI is .185 and .161

(blending phonemes and segmenting words, respectively), which is small to medium. In Table 9 the effect size for PA (BP and SW) on passage comprehension is .096 and .228, respectively. BP shows a small relation with PC and a medium relation with SW. The *p* values are below .05 and show these results and relations are statistically significant. These results are also indicated in Figures 5-8.

Table 9 *Regression Analysis Model Summary for PA (end of K) and Reading Ability (beginning of first)*

Letter Word Identification							
PA	R	R^2	Beta	t	df1	df2	Sig. F Change
BP2	.430	.185	.430	3.466	1	53	.001*
SW2	.402	.161	.402	3.192	1	53	.002*
Passage Comprehension							
PA	R	R^2	Beta	t	df1	df2	Sig. F Change
BP2	.310	.096	.310	2.377	1	53	.021*
SW2	.478	.228	.478	3.958	1	53	.000***

Note. N=55; * p <.05. ***p <.001. BP=Blending Phonemes. SW=Segmenting Words. PA=Phonemic Awareness. 2= data collected in the spring of 2004.

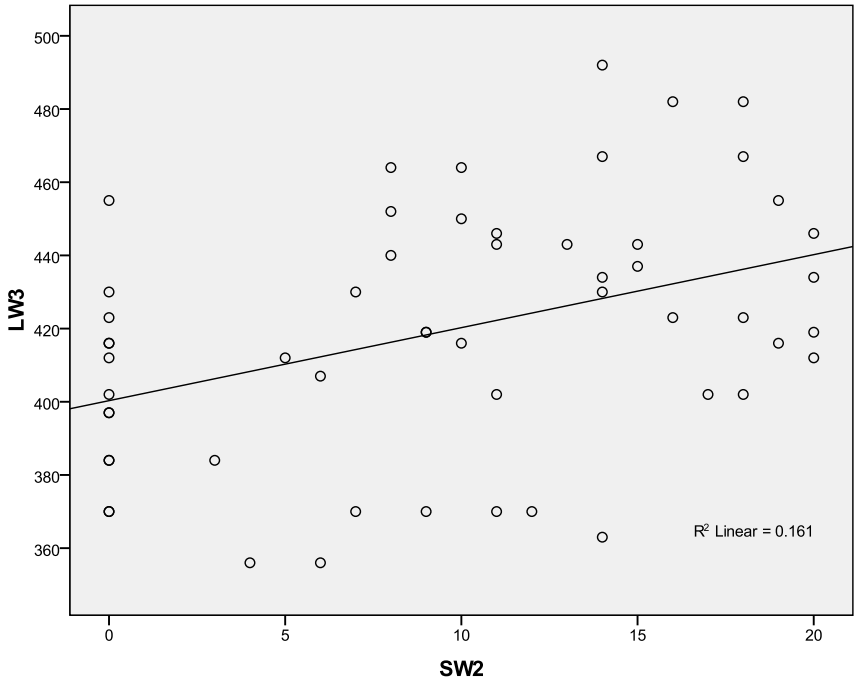

Figure 5 *Regression Model of SW (end of kindergarten) and LWI (beginning of first)*

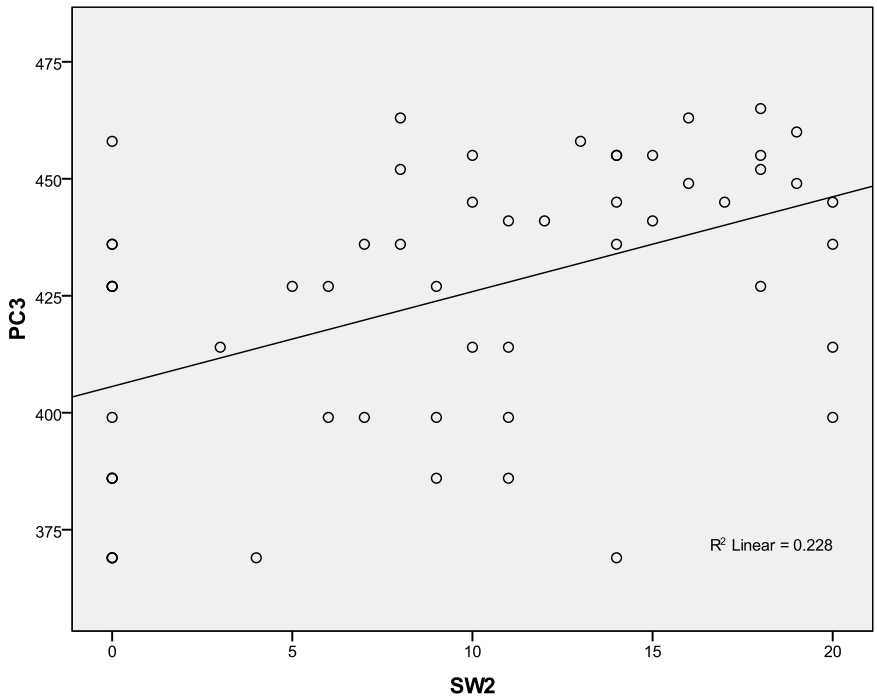

Figure 6 *Regression Model of SW (end of K) and PC (beginning of first)*

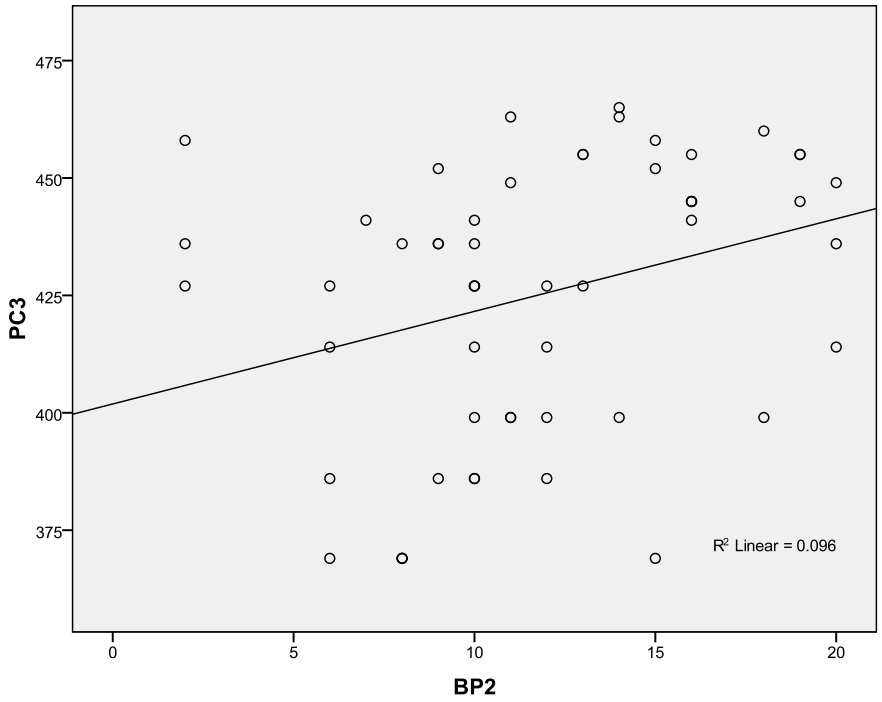

Figure 7 *Regression Model of BP (end of K) and PC (beginning of first)*

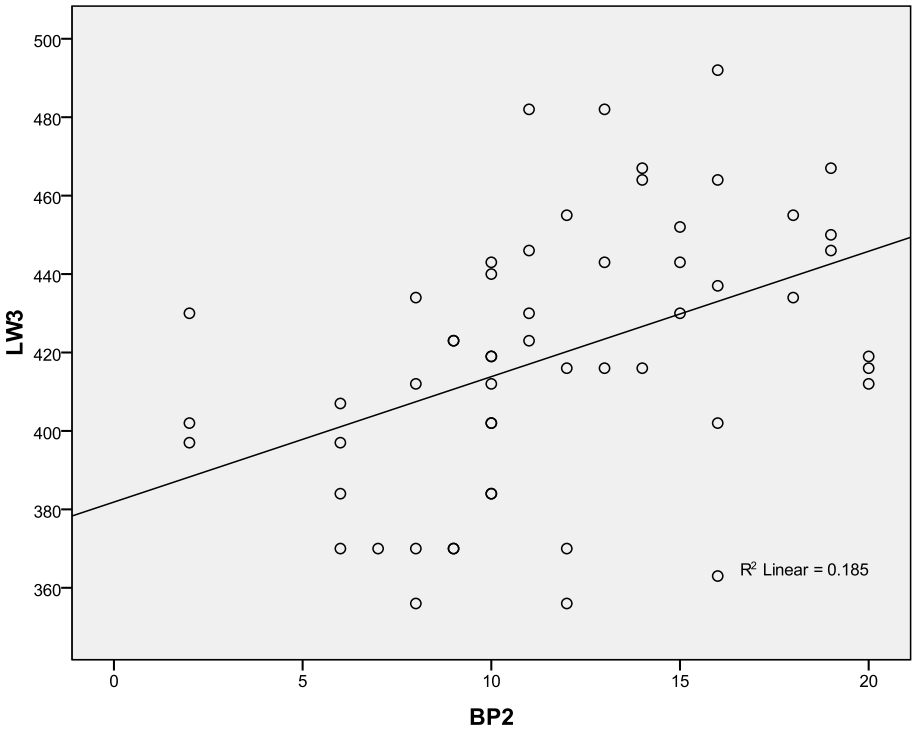

Figure 8 *Regression Model of BP (end of K) and LWI (beginning of first)*

Question 2B

Do phonemic awareness abilities at the end of kindergarten predict reading ability at the end of first grade?

The same data analysis strategy were provided to answer question 2B which addressed the predictive role of the independent variable of phonemic awareness (blending phonemes and segmenting words) at the end of kindergarten on the dependent variable of reading ability at the end of first grade. Descriptive statistics are presented in Table 10.

Table 10 *Descriptive Statistics of PA (end of K) and Reading Ability (end of first grade)*

Subtests	Mean	SD
LWI4	476.71	51.862
BP2	11.75	4.592
PC4	452.75	31.398
SW2	9.58	6.874

Note: PA= phonemic awareness. BP= blending phonemes. SW= segmenting words. PC= passage comprehension. LWI=letter word identification 2=data collected in spring 2005. 4=data collected in spring of 2006.

To answer question 2B as whether there is statistically significant prediction of phonemic awareness at the end of kindergarten on reading ability at the end of first grade, correlation and regression analyses were performed. In Table 11 the Pearson correlation is shown for the variables.

The Pearson correlation shows that there is no statistically significant prediction of phonemic awareness at the end of kindergarten on reading ability at the end of first grade. Neither *p* value of Pearson r between the sub skills of PA and reading abilities falls below the pre-determined level.

Multiple regression analysis is presented in Table 12. For phonemic awareness, both variables show not to be statistically significant with the *p* values above .05. The adjusted R^2 effect sizes are small and not statistically significant due to the large p value which shows that the results could be due to chance.

Table 11 *Correlations of Predictive PA (end of K) on Reading Ability (end of first grade)*

Phonemic Awareness	Reading Ability	
	LWI4	PC4
BP2	-.049	.000
SW2	.310	-.161

Note. N=55; * p <.05. ***p <.001. BP= blending phonemes. PA= phonemic awareness. SW= segmenting words. PC= Passage Comprehension. LWI=letter word identification. 2=data collected in spring of 2005. 4=data collected in spring of 2006.

In summary, phonemic awareness at the end of kindergarten does have a predictive positive relationship to reading ability at the beginning of first grade with a medium effect size. Among these correlations, segmenting words has a stronger relationship with passage comprehension with a correlation of .478. All areas of phonemic awareness at the end of kindergarten did show to have a relationship with both areas of reading ability at the beginning of first grade.

The data analysis from question 2B shows that no significant relationship exists between phonemic awareness abilities at the end of kindergarten and reading abilities at the end of first grade.

Table 12 *Multiple Regression Analysis Summary for PA (end of K) and Reading Ability (end of first grade)*

Letter Word Identification							
PA	R	R^2	Beta	t	df1	df2	Sig. F Change
BP2	.049	.002	-.049	-.358	1	53	.722
SW2	.258	.067	-.258	-1.945	1	53	.057

Passage Comprehension							
PA	R	R^2	Beta	t	df1	df2	Sig. F Change
BP2	.000	.000	.000	.000	1	53	.999
SW2	.161	.026	-.161	-1.190	1	53	.239

Note. N=55; * p <.05. ***p <.001. BP=Blending Phonemes. SW=Segmenting Words. PA=Phonemic Awareness. 2= data collected in the spring of 2004.

Summary

The purpose of this study was to analyze the prediction of Spanish phonemic awareness in the areas of blending phonemes and segmenting words on reading ability particularly in the areas of letter word identification and passage comprehension. The students assessed participated in a bilingual classroom in kindergarten and continued through first grade. For the correlation and regression analyses, the students were tested for phonemic awareness at the beginning and end of kindergarten and reading ability at the beginning and end of first grade. With a total of 55 students, this chapter reported data analysis in the following order: (a) descriptive statistics, (b) Pearson correlation, (c)

multiple regression analysis and (d) linear regression model graphic representation. Each of these analyses was provided to determine the impact of phonemic awareness (blending phonemes and segmenting words) on letter word identification and passage comprehension. Results were provided first for the prediction of phonemic awareness abilities at the beginning of kindergarten on reading abilities at the beginning and end of first grade. Next, the predictive relationship of PA abilities at the end of kindergarten on reading abilities at the beginning of first grade were reported followed by the PA abilities at the end of kindergarten and the reading abilities at the end of first grade. The next chapter will present discussion, limitations, recommendations, and conclusions of this research study and data.

CHAPTER V

DISCUSSION, LIMITATIONS, RECOMMENDATIONS AND CONCLUSIONS

In today's schools, too many children struggle with learning to read. As teachers and parents will attest, reading failure has exacted a tremendous long-term consequence for children's developing self-confidence and motivation to learn, as well as for their later school performance. When today's educators discuss the ingredients of effective programs to teach children to read, phonemic awareness (PA) receives much attention. In education, particularly in reading education the choice of instructional methods has been influenced by many factors. The instructor's decision and experience alone has not determined the mode of instruction but also the politics, economics, and popular teaching practices of the day (NRP, 2000). There is much misunderstanding of instruction method definitions and the implementation process of phonological and phonemic awareness practice. The implementation varies from state to state, district to district and particularly campus to campus, much depending on the curricular reading resources being employed. With regards to Spanish literacy, the debate over the importance of phonemic awareness and the role of syllabic versus phonemic instruction continues. This study followed 55 native Spanish-speaking ELL students from kindergarten through first grade who participated in a typical transitional bilingual program. This study aimed to capture the students' phonemic awareness abilities in kindergarten and compare those abilities to their reading ability in Spanish during their first grade year. This study hopes to inform policy-makers, curriculum experts and

school districts of phonemic awareness instruction's role in Spanish learning to better student reading ability in their primary language. Data collected from this study were guided by two research questions. In accordance with the previous chapters of literature review and data analyses, a comprehensive discussion is provided in order of each research question.

Discussion: Research Question #1

Question 1A

Do phonemic awareness abilities at the beginning of kindergarten predict reading ability at the beginning of first grade?

Students participating in the typical bilingual program were measured by two phonemic awareness tests, blending phonemes and segmenting words. Overall, both tests demonstrated statistically significant correlations with letter word identification at the beginning of first grade. These correlations were moderate and positive with magnitude of .428 for blending phonemes and .370 for segmenting words, respectively. Similarly, the standardized regression coefficients were also statistically significant with medium effect sizes. Further, both tests of phonemic awareness demonstrated statistically significant correlations with passage comprehension at the beginning of first grade. These correlations were moderate and positive, with magnitude of .337 for blending phonemes and .317 for segmenting words, respectively. The standardized regression coefficients were statistically significant with medium effect sizes. These results suggest that PA significantly predicts subsequent reading ability for ELL students at early grade levels. Such finding is consistent with what the NRP found in the English language with

a moderate effect size for PA and reading (2000). Blending phonemes had the highest correlation with letter word identification, which is significant in overall reading ability because phonemic awareness can assist decoding primarily through its influence on blending phonemes and word reading. For children to understand what they read, they must be able to read words rapidly and accurately. If a student can blend words together quickly, then reading in Spanish should be an easier process due to the shallow transparent orthography and thus, comprehension will be facilitated as well. If a child is strong in phonemic understanding, he/she can read quickly by blending the parts of the word together and thus, understanding the material. Therefore, this study confirms the predictive power of phonemic awareness on decoding and reading comprehension skills.

Question 1B

Do phonemic awareness abilities at the beginning of kindergarten predict reading ability at the end of first grade?

The findings of question 1B show that no statistically significant relationship exists between phonemic awareness abilities at the beginning of kindergarten and reading abilities at the end of first grade. These results are consistent with those found by Signorini's (1997) and Manrique and Signorini's (1994) studies, which failed to identify a significant prediction of phonemic awareness skills on reading abilities. Carillo (1994) also claimed that by the end of first grade some PA skills were not associated with decoding skills. An explanation for this could be once students receive explicit instruction in phonological skills that the predictive ability of phonological awareness related to reading ability decreases.

Discussion: Research Question #2

Question 2A

Do phonemic awareness abilities at the end of kindergarten predict reading ability at the beginning of first grade?

Students participating in the typical bilingual program were measured by two phonemic awareness tests, blending phonemes and segmenting words. Overall, both tests demonstrated statistically significant correlations with letter word identification at the beginning of first grade. These correlations were positive and moderate, with magnitude of .430 for blending phonemes and .407 for segmenting words. Similarly, the standardized regression coefficients were also statistically significant with magnitude of .430 and 402, respectively. Further, both tests of phonemic awareness demonstrated statistically significant correlations with passage comprehension at the beginning of first grade. These correlations were moderate and positive, with magnitude of .310 for blending phonemes and .478 for segmenting words. The standard regression coefficients were .310 and .478, respectively. This finding is supported by studies on literacy instruction for Spanish (August & Shanahan, 2006) and for the English language, which showed a moderate effect size for PA on reading (NRP, 2000). Blending phonemes and segmenting words abilities are critical skills for overall reading ability because phonemic awareness can assist reading comprehension primarily through its influence on blending phonemes and word reading. The highest correlation for this hypothesis was between segmenting words and passage comprehension. If a student can segment words together quickly, they often understand how to blend word parts. Reading in Spanish would then

be an easier process to blend words together because of the shallow transparent orthography and thus, comprehension will be positively influenced as well. This also could be an indicator of the notion that if a child is strong in phonemic understanding, the child then can read quickly by blending the parts of the word together and thus, understanding the material. Therefore, this study confirms the predictive power of phonemic awareness on decoding and reading comprehension skills.

Question 2B

Do phonemic awareness abilities at the end of kindergarten predict reading ability at the end of first grade?

The data analysis from question 2B does not reveal statistically significant prediction of phonemic awareness abilities at the beginning of kindergarten on reading abilities at the end of first grade. However, the regression analysis did not yield significant coefficients. These results are consistent with those reported by Manrique and Signorini (1994) that no significant predictive relationship was evident between reading skills and phonemic awareness skills. This was also found by Carillo (1994) who found that by the end of first grade some PA skills did not show a relation to decoding skills. An explanation for this could also be that once students receive explicit instruction in phonological skills, the predictive ability of phonological awareness related to reading ability decreases. These results are also consistent with the NRP's (2000) findings that phonemic awareness exhibited a much larger effect on preschool literacy outcomes than on literacy outcomes in higher grade levels.

Phonemic Awareness and Reading Ability in Spanish

For English, phonemic awareness has been identified among the best indicators of children's reading capacity during their first two years of school (NRP, 2000). Although studies have also supported the predictive power of PA in Spanish on reading success (Hogan, Catts, & Little, 2005; Stahl & Murray, 1994; Wagner, et al., 1997); yet such impact might not be as strong as it has been found in the English language (Carillo, 1994; Dugunogly, Nagy, & Hancin-Blatt, 1993). Furthermore, there is debate as whether syllabic or phonemic understanding impacts reading success in the Spanish language. The findings from this study reveal that phonemic awareness abilities at the beginning and end of kindergarten significantly predict reading ability at the beginning of first grade. However, phonemic awareness in kindergarten does not predict either area of reading ability (i.e., letter word identification and reading comprehension) at the end of first grade. The findings are consistent with Carillo (1994) who found that phonemic skills in kindergarten were correlated to reading ability in latter kindergarten but not by the end of 1st grade reading abilities, when phonics and decoding instruction had increased.

Recommendations

Recommendations for Research

Findings derived from this study hold that PA has a predictive relationship with reading ability. However, the magnitude of such relationship decreases as literacy instruction occurs. Blending phonemes had the strongest correlation with letter word identification and segmenting words had the strongest correlation with passage

comprehension. Because empirical evidence is lacking, it is recommended that further testing be done to evaluate the strongest relation between the different skills of PA and reading ability in Spanish. Further testing also should occur in Spanish to evaluate if a stronger relationship exists between phonemic awareness and reading ability for specific grade levels. These investigations are needed to address the specific skills in kindergarten that predict subsequent reading success.

Another recommendation for future research is to include a control group and treatment group in order to conclusively evaluate the effectiveness of PA and reading ability. PA skills could be taught separately in a treatment group setting to provide data on which instructional practices are most effective for phonemic awareness.

Additionally, in this study PA did have a significant relation with letter word identification and passage comprehension at the beginning of first grade. This is consistent with previous findings from evaluative studies in English and Spanish, which had a higher effect size for letter word identification (August & Shananhan, 2006; NRP, 2000). In this current study, segmenting words also had larger effect size and stronger correlation to passage comprehension. This relation needs to be further investigated in Spanish and could be due to a difference in literacy aspects from English to Spanish.

Recommendations for Literary Practice

In this study, skills that were developed in kindergarten had a relationship with the abilities at the beginning of first grade. As instruction progressed throughout first grade, this relationship decreased. This relation between sub skills of phonemic awareness in Spanish and reading ability could influence school districts implementation

of literacy practices. This study undermines the importance of teaching phonemic awareness in kindergarten and ensuring that students have a foundation in these phonemic awareness abilities.

Finally, at teacher preparation programs throughout universities in the state of Texas, methods courses often focus on literacy approaches that should be included in the classroom. For bilingual teachers, these courses focus on English literacy knowledge and are often taught in English. Therefore, research practices should be evaluated for literacy instruction practices in Spanish. This study shows that phonemic awareness activities are important to Spanish reading ability; data such as this should be shared with teachers coming into the field of bilingual education.

Limitations

This study occurred in a single large urban school district in the state of Texas. Therefore, generalization of results beyond the district setting, or those that are similar to students' demographics, community, resources, should be limited. Moreover, these results were collected over a two-year period, and the predictive relation beyond that point cannot be made. Furthermore, phonemic awareness and reading ability were based on two subtests in each category, which cannot necessarily be generalized to an overall PA or reading ability. The curriculum implemented into the typical bilingual classrooms was also not controlled by the researcher. The teachers followed local curriculum for literacy and phonemic awareness. Lastly, student participants in this study were from transitional bilingual classrooms and therefore, results are limited in generalization beyond this program setting.

Implications and Conclusions

Phonological and Phonemic Awareness in Spanish

Phonemic awareness in Spanish is a field requiring more rigorous scientific research. At the state level, phonological and phonemic awareness is evaluated through yearly tests and results are presented to districts for review. However, the relation between these sub skills of phonemic awareness and reading ability need to be further investigated in Spanish. The results will yield information that can further drive policy makers and district personnel to make informed decisions about literacy instruction in Spanish speaking bilingual classrooms. In this study, different sub skills of PA were found to be linked to reading comprehension and to decoding skills. This finding is consistent with the research synthesis of studies concerning the English language (NRP, 2000) and the Spanish language (August & Shanhan, 2006). This study and other empirical evidence show that there is a relation between PA and reading ability. However, in this study, the variable relationship was only evident from the beginning and end of kindergarten to the beginning of first grade; and subsided throughout first grade, which suggests the importance of the mastery of these skills in kindergarten. This significance is important for instruction in current bilingual classrooms. Prediction of phonemic awareness exists on reading abilities when these skills are mastered in kindergarten. Therefore, in order to have a higher initial level of reading skills in first grade, pre-literacy instruction of PA in kindergarten is critical. This prepares students for reading instruction in first grade and their reading abilities can be fostered. If students are strong readers and have a strong foundation of literacy skills in Spanish, these skills

will also transfer to English, which in turn can promote academic success as is supported from theoretical and research perspectives (Cummins, 1979; Thomas & Collier, 2002).

This study presented an evaluation of two years of data and concluded that in current typical bilingual classrooms phonemic awareness is associated with reading ability (passage comprehension). It is important to note that these typical bilingual classrooms that were evaluated are similar in instruction and resources to other bilingual classrooms throughout the state of Texas. Therefore, in order to best influence literacy instructional practices, investigation should occur to determine the most effective Spanish PA practices for kindergarten. Many resources and educators in classrooms today might not include the scaffolding of phonological and phonemic awareness practices and therefore, literacy instruction is influenced by these sub skills that are taught daily. According to the NRP (2000), the following PA practices have been proven effective for English learning: phoneme isolation, phoneme identity, phoneme categorization, phoneme blending, phoneme segmentation, phoneme addition and phoneme substitution. The Panel also recommends focusing on two or three of these skills in classroom instruction, rather than including all. This instructional suggestion would be useful information to use and implement in an evaluative study to investigate the effectiveness of each of these skills in Spanish and therefore, influence policy makers so the most effective can be implemented into the bilingual kindergarten classroom.

Debate on which classroom practice to teach ELLs still exists throughout the state of Texas. Researchers and practitioners have been seeking best practices to educate

the ELL population (Crawford, 2000). Because bilingual programs are currently mandatory in the state of Texas for grade levels within a district that has 20 or more ELL students (TEA, 2009b) an investigation of best practices of native literacy instruction is necessary. Meanwhile, choosing and implementing effective literacy strategies and practices for ELL students participating in bilingual classrooms demands understanding of literacy instruction in Spanish and a consideration of a district's goals and resources as well as the needs and characteristics of the bilingual students (Garcia, 2005).

Concluding Remarks

The findings reported in this dissertation have theoretical and practical consequences. The data from this study present a picture of a predictive relation between Spanish phonemic awareness skills acquired in kindergarten and reading ability at the onset of first grade. More importantly, the findings open a window of information that asks policy-makers, researchers, district personnel and bilingual teachers to evaluate the literacy instructional practices occurring in bilingual classrooms today. The findings compel us to reinvestigate and reexamine the relation between Spanish reading ability and phonemic awareness skills in Spanish, with a particular emphasis on the syllabic and phonemic skills most essential in Spanish.

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