

ASSESSING SPANISH EARLY WRITING DEVELOPMENT OF PRESCHOOL  
ENGLISH LANGUAGE LEARNERS AND ITS LINK TO ENGLISH EARLY  
WRITING DEVELOPMENT

A Dissertation

by

ESMERALDA LOPEZ

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 2011

Major Subject: School Psychology

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## ABSTRACT

Assessing Spanish Early Writing Development of Preschool English Language Learners  
and Its Link to English Early Writing Development. (August 2011)

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Children who speak limited English are at particular jeopardy of school failure because of multiple risk factors. In the later grades, these children have difficulty making progress towards state standards in English reading and English writing. Research with bilingual children indicates that children transfer phonological awareness and writing skills across languages. However, the research on cross-linguistic transfer of early writing is sparse when compared to the phonological awareness research base.

This study is important because it aims to address the gap in the literature by exploring ELLs' pathway from Spanish (L1) to English (L2) written language and moderators of this pathway. Using a sample of 110 preschool English-language learners, the children's early writing performance was compared to national norms in 2007 and 2008 using a standardized instrument that prompts them to write letters and words from dictation.

The data was analyzed using commonality regression analysis and canonical correlation to examine 1) shared and unique variance of performance on the English dictation measure accounted for by English and Spanish phonological awareness 2) shared and unique variance of performance on the Spanish dictation measure accounted for by English and Spanish phonological awareness and 3) interrelationships between early writing and phonological awareness in English and Spanish.

Although it was expected that the student's performance on the English dictation task would be below average when compared to national norms, the students' performance was low average. The results from commonality regression and canonical correlation analysis indicated that the greatest unique contribution to English and Spanish dictation in 2008 was Spanish dictation in 2007. Finally, the results from the canonical correlation regression indicated that the Spanish literacy skills made a greater contribution to the phonological awareness and dictation synthetic variables than did the parallel English literacy skills.

## DEDICATION

This work is dedicated to my parents, Oscar and Hermelinda López. As people, they continue to serve as models of integrity and proper living. As parents, they provided abundant experiences that paved an indelible pathway to the present moment. Thank you for showing me how to unconditionally celebrate life, honor simplicity and playfully stretch the limits. Blessed are my mother and father.

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## CHAPTER I

## INTRODUCTION: LITERACY SKILLS OF ENGLISH LANGUAGE LEARNERS

Today's classroom is an amalgamation of children from diverse cultures, learning needs and languages. From among these students one group particularly at-risk for learning difficulties are English-language learners (ELLs). The Texas Education Agency (TEA) defines ELLs as students whose primary language is not English and whose English language skills are such that they have difficulty performing grade-level class work in English (TEA, 2007). The National Clearinghouse for English Language Acquisition and Language Instruction Educational Programs (NCELA) estimates that during the 2003-2004 school year, English-language learners constituted 10.1% of total student enrollment in United States schools, an 81.3% increase over the previous decade (NCELA, 2004). Demographically, 88% of these ELLs were born in the United States with more than 90% considered Spanish speakers. This amounts to five million children who according to Snow, Burns & Griffin (1998) are at high risk for learning difficulties and school failure.

These difficulties may be more likely in academic areas with a strong language basis such as writing. So, formal writing instruction is especially important for children reared in low-literate environments (e.g., limited access to books, storytelling, rich language exposure, and frequent exposure to written language). Compared to monolingual English cultures, Spanish speaking cultures are more likely to transmit their traditions and values through oral language (e.g. storytelling, folk songs, and

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This dissertation follows the style of *Early Childhood Research Quarterly*.

drama) instead of storybook reading which helps them associate print and speech (Purcell-Gates, 1996). These non-conventional forms of literacy may be undervalued by teachers in English spectrum classrooms. Also given the reciprocal relationship between reading and writing (Tierney & Pearson, 1983; Shanahan, 1984; Chomsky, 1979; Read, 1971), if an English-language learner has difficulty making sufficient progress towards state standards in reading then this lack of progress may also relate to poor writing outcomes (TEA, 2010).

Although literacy research with English-language learners has focused on reading with school-aged children primarily, relatively few studies have explored the development of early writing among English-language learners in the preschool population and the transferability of early writing across languages (Escamilla, 2006; Freeman & Freeman, 2000; Moll, Saez, Dworin, 2001). For children with low English proficiency, practice with writing in their first language may strengthen crucial skills that can quite possibly transfer to their second language (e.g., English) (Davis, Carlisle & Beeman, 1999; Lanauze & Snow, 1989; Durgunoğlu, Nagy & Hancin-Bhatt, 1993). These early attempts at writing, also known as early writing or emergent writing, can influence and deepen a child's understanding and learning of related literacy skills, especially when learning another language (Bear, Invernizzi, Templeton & Johnson, 2004; Rubin & Carlan, 2005; Mills, 1998).

The purpose of this study is to assess the Spanish early writing development of preschool English-language learners and its link to English early writing development.

Given the large numbers of ELLs in Texas (NCELA, 2004), the focus will be on Texas state standards and guidelines for writing.

### *Emergent Writing and Related Literacy Skills*

Successful writing development relies on automaticity of lower-level writing skills such as the ability to relate print units (e.g., letter, letter combinations, letter sequences, words, and punctuation marks) with linguistic units (phonemes, onsets, rimes, and syllables). Children gain the ability to represent these linguistic units on print through a series of stages known as emergent writing. The stages range from scribbling to invented spelling (Cardoso-Martins, Correa, Lemons & Napoleao, R., 2006; Ferreiro, 1990). Although writing is an aspect of preschool curriculum guidelines, it is often neglected in classrooms because teachers often perceive it as a complex skill with developmental precursors inaccessible during the preschool period (NAEYC, 1998). However, according to the 2004 position statement on developmentally appropriate literacy practices published by the International Reading Association (IRA) and the National Association for the Education of Young Children (1996), preschool curriculum guidelines should not be ignored because developmental precursors are accessible during the preschool period.

Teachers and parents often perceive preschool children's early attempts at writing (e.g., drawings, marks, scribbles, and lines) as random non-literacy-related acts unrelated to later writing thereby failing to notice young children's important early attempts at conventional writing. These attempts, also known as emergent writing, can deepen a child's understanding and learning of related and interwoven literacy skills,

especially in another language (Bear, et al., 2004; Rubin & Carlan, 2005; Mills, 1998). These early attempts may give bilingual children an advantage in acquiring and practicing the different levels of phonological awareness, especially phonemic awareness because studies of phonemic awareness and spelling have shown a relationship between the two (Kamii & Manning, 2002; He & Wang, 2008; Richgels, 1987). Because they are both alphabetic languages, English and Spanish share morphological features; however, unlike English, Spanish is orthographically more transparent. Therefore, once a Spanish-speaking learner has made the connection between graphemes (the written representation of a sound) and phonemes (the speech sound), writing acquisition is more easily facilitated than for students learning to write only in English, a language less orthographically transparent (de Manrique & Signorini, 1994).

#### *Cross-Linguistic Transfer of Literacy Skills*

It is well documented that cross-linguistic transfer may occur at the phonological, morphological, and syntactical levels (Lopez & Greenfield, 2004; Leafstedt & Gerber, 2005). On a dictation subtest, Tabors, Paez and Lopez (2003) found that the preschool children in their sample performed similarly across Spanish and English. Other studies have found a relationship between phonemic awareness and spelling across languages (Kamii & Manning, 2002; He & Wang, 2008, Richgels, 1986). Although research on the transferability of dictation skills is sparse, studies on the transferability of phonological awareness (i.e., knowledge of the oral structure of language) are more common

(Durgunoğlu et al, 1993; Cisero & Royer, 1995; Lopez & Greenfield, 2004; Dickinson, McCabe, Clark-Chiarelli & Wolf, 2004).

The evidence for cross-linguistic transfer of skills supports Cummin's (1979) linguistic interdependence hypothesis and concept of common underlying proficiencies (CUP), which is underlying general knowledge about language that exists beneath the surface of bilingual language abilities. The linguistic interdependence hypothesis predicts a degree of Spanish phonic elements with positive transfer to English (Honig, Diamond & Gutlohn, 2000). Because this relationship depends on the level of proficiency in the first language, Cummins argues for the development of children's first language prior to intense instruction in the second language. This is because of his discovery that a strong foundation in a first language facilitates the transition of skills to a second language. Cummins hypothesized that metalinguistic (e.g. phonological awareness) and academically mediated language skills (e.g. spelling and vocabulary for concepts) transfer across languages. In addition, children learning a second language with similar phonological structure and alphabetic orthographic system (e.g. English and Spanish) may have some advantage when learning to read and write in English. For example, children who spoke Spanish and English did better than English-speaking monolinguals on a phoneme segmentation task but not on other phonological awareness tasks (Bialystok, Majumder & Martin, 2003). Therefore, it is possible to capitalize on the experiences and skills such as early writing that bilingual children bring to school by using what they already have to optimize the acquisition of learning of new-language learning.

*Statement of the Problem and Purpose of the Study*

Children who speak limited English are at particular jeopardy of school failure because of multiple risk factors (Pungello, Kupersmidt, Burchinal & Patterson, 1996). These risk factors often include limited access to early childhood education, early intervention programs with questionable outcomes, low-literate parents, impoverished verbal interactions, limited home literacy resources and a documented shortage of adequately trained bilingual teachers (Carrier & Cohen, 2005; Sakash & Chou, 2007; Garces, Thomas & Currie, 2006; Barnett & Hustedt, 2005; Larson & Verma, 1999; Dickinson & Tabors, 2002). When compared to same age peers, English-language learners exhibit higher rates of poverty and limited access to early childhood education programs even when those programs are available (National Center for Education Statistics, 2007; Snow et al., 1998). These early programs have documented predictive validity (Pianta & McCoy, 1997). Of those ELLs attending early childhood programs, many are enrolled in Head Start programs. However, research indicates that the cognitive benefits of enriched preschooling typically disappear by third grade if students receive instruction that is not tailored to their needs (Garces et al., 2006; Barnett & Hustedt, 2005). For example, the Head Start Impact Study (January 2010) found no academic gains for English-language learners enrolled in their programs. When compared to children from monolingual English families, the home literacy environment of ELLs is less likely to be aligned with the literacy practices of the school environment. The relationship between home literacy practices and how prepared children are for school is well documented (Farver Xu, Eppe & Lonigan, 2006). There is evidence that



parent-child book reading, an activity that supports early language and literacy development (Larson & Verma, 1999; Dickinson & Tabors, 2001), is less common in homes of English-language learners (Snow et al., 1998). However at a time when the ELL population is growing, there is a serious shortage of adequately trained bilingual teachers to serve them (Carrier & Cohen, 2005; Sakash & Chou, 2007).

Given the multiple risk factors encountered by English language-learners, the lack of research on both emergent writing development with these preschool children and the cross-linguistic transfer of emergent writing from Spanish to English, this study is important because it aims to address the gap in the literature by exploring ELLs' pathway from Spanish (L1) to English (L2) written language and moderators of this pathway. Research with bilingual children indicates that children transfer a variety of component literacy skills from their first language to their second language (Leafstedt & Gerber, 2005; Jimenez & Haro, 1995). This study proposes to examine the Spanish component literacy skills (e.g. phonological awareness and emergent writing) that transfer and their contributions to English emergent writing. The author aims to test the following hypotheses.

### **Hypothesis 1**

Consistent with previous research, it was expected that the children's dictation scores would be lower than national norms on the Woodcock Johnson Test of Achievement III in English for the preschool children in the sample.

**Hypothesis 2**

Consistent with the literature base on cross-linguistic transfer of language and literacy skills, it was hypothesized that a statistically significant positive relationship would exist between Spanish and English phonological awareness and English dictation as measured by the Woodcock Johnson Test of Achievement III for the preschool children in the sample.

**Hypothesis 3**

Consistent with the literature base on cross-linguistic transfer of language and literacy skills, it was hypothesized that a statistically significant positive relationship would exist between Spanish and English phonological awareness and Spanish dictation as measured by the Woodcock Muñoz Prueba de Aprovechimiento for the preschool children in the sample.

**Hypothesis 4**

Consistent with the literature base on the interrelatedness of literacy domains across languages with similar phonetic and orthographic structures, it was hypothesized that a statistically significant positive relationship would exist between the domains of phonological awareness and dictation.

## CHAPTER II

### REVIEW OF THE RELATED LITERATURE

This chapter presents a justification for examining the early writing development in Spanish of preschool English-language learners and its connection to early writing development in English. First, conceptual frameworks for this study are provided. Second, the rationale for the importance of phonological awareness in the development of early writing is discussed. Then an overview and review of the literature on early writing is presented followed by a discussion of cross-linguistic transfer of literacy skills. Finally, the statement of the problem and the research questions that this study aims to answer are presented.

#### *Conceptual Framework for Emergent Writing*

Over the last 40 years research theories have illuminated the process by which children gain knowledge about writing (Templeton & Morris, 1999; Kameenui, Simmons, Baker, Chard, Dickson & Gunn, 1995). The distinct theories that have emerged either describe writing as a process of rote memorization with a strong focus on regular sound-spelling patterns or a developmental process with recognizable stages along a continuum (Bear & Templeton, 1998). The developmental process has received greater acceptance recently because it is closely aligned with developmentally appropriate practices for teaching young children academic skills such as reading and writing (National Association for the Education of Young Children, 1998). This developmental process is systematic and evolves along discernible conceptual stages that are relatively stable across different dialects and languages (Bloodgood , 1999;

Henderson, 1985). The process begins with emerging writing, which involves drawing, scribbling, letter-like forms and culminates in invented spelling (Clay, 1975; Crowell, Kawakami & Wong, 1986). Invented spelling is a term coined by Charles Read in 1971 to describe the early spellings that children independently produce (Richgels, 1987). It is the ability to attend to the sound units in words and associate letters with those units in a systematic but nontraditional way before formal instruction in reading and spelling (Burns & Richgels, 1989). Invented spelling has been interpreted and expanded by others (Chomsky, 1979; Clay, 1975; Gentry, 2005; Hassett & Curwood, 2010) because it is developmentally sound (i.e., has recognizable stages that culminate in conventional spelling) and affords children the opportunity to write in authentic and meaningful ways (Kamii & Manning, 2002).

*Phonological Awareness: A Variable Related to Emergent Writing*

Emergent literacy consists of the skills, knowledge and attitudes that are presumed to be developmental precursors to conventional forms of reading and writing (Whitehurst & Lonigan, 1998). A component of emergent literacy that relates to writing development in English and Spanish is phonological awareness (Foy & Mann, 2001; He & Wang, 2008; Kamii & Manning, 2002). Phonological awareness, which usually begins at age three, is the ability to attend explicitly to the phonological structure of spoken words, rather than just their meanings and syntactic roles. It is relatively stable in a given language, (i.e., children's scores in the fall correlate with their scores in the spring), even in preschool children (Dickinson, McCabe, Clark-Chiarelli and Wolf, 2004). It refers to the conscious ability to detect and manipulate sounds in spoken

language. This detection and manipulation can be at the level of words in a sentence, syllables in a word, onset/rime of a word or at the most segmented level, phonemic awareness (i.e. detection and manipulation of individual phonemes in a word).

Phonemic awareness is a more refined type of phonological awareness and relates to the understanding that spoken language is composed of phonemes or speech sounds (Snow et al., 1998). Phonemes can correspond either to individual letters, (e.g., “f”) or letter clusters “fr.” Training in phonemic awareness appears to have a positive effect on spelling ability and vice versa in English and Spanish (Denton, Hasbrouck, Weaver & Riccio, 2000). Invented spelling requires the deliberate attention to the individual sounds in words. This attention may provide children with a greater understanding of the phonetic structure of words, which may be related to children’s phonological awareness, such as rhyming, blending, and segmenting. In addition, the presence of phonological awareness is a quality of a good reader and its absence is a reliable characteristic of poor readers (Adams, 1990). Carrillo (1994) found that the strongest readers in first-grade were those who had the strongest phoneme segmentation abilities. Not only is phonological awareness a precursor to reading, it is also a correlate and a predictor of future reading achievement (Dickinson et al., 2004). It accounts for most of the variance between good and poor readers (Wagner & Torgesen, 1987; Torgesen & Davis, 1996). Even for young children, delays in phonological awareness are easy to detect and many children with deficits in phonological awareness respond to remediation, especially if remediation begins early in schooling (Kameenui, 1999). If phonological awareness is taught along with attention to grapheme-phoneme

correspondence, the gains for children may be even greater (Ehri & Sweet, 1991). Researchers have found that phonological awareness is related to word recognition within and across languages (Leafstedt, Richards & Gerber, 2004) because metalinguistic awareness, (i.e., thinking about and manipulating phonological units) is not a skill specific to a language (Carrillo, 1994). For example, Durgunoğlu, et al., found that the best predictors of performance on English word recognition and pseudoword reading, (e.g., reading made-up words), were Spanish phonological awareness and Spanish word recognition.

In summary, phonological awareness, a language-based literacy component, has a promising role in the development of early writing and may provide insight into ELLs' pathway from English to Spanish early writing. It appears to be a valuable resource within and across languages, specifically in alphabetic writing systems (e.g., English and Spanish) and can be a means of promoting early writing in Spanish and English in English-language learners.

### *Emergent Writing*

Emergent writing is important because it precedes conventional writing; a skill that is gaining increasing importance as the mode of communication and assessment in higher education (Burke, 2008). Gibson and Levin's (1975) study with children as young as one and a half documented an early interest in writing. The toddlers in their study showed interest and persistence in making scribbles when given a paper and pencil. Instead of a pencil, the control group received a stylus but showed only brief interest in this instrument. Instead, after only a brief amount of exploration, they

dropped the stylus and moved on to something else of interest. So it appears that the ability to produce a mark was the element that determined the toddlers' preference for the pencil over the stylus.

According to Lin, Monroe, and Troia (2007), the development of writing follows a pattern from a self-centered, local focus toward a more global, audience-oriented focus. The development of emergent writing is evident through stages beginning with spontaneous scribbling to controlled scribbling to letter and number like forms and on to letters and later invented spelling (Clay, 1975; Ferreiro & Teberosky, 1982; Welsch, Sullivan & Justice, 2003). Ferreiro (1990) has identified a similar developmental trajectory in the development of writing in Spanish. At the first level, children distinguish between drawing and writing. At level two children are beginning to distinguish one group of letters from another group of letters for distinct communication. Here children vary the quantity and position of letters or change the letters altogether. The third and final phase is the phonetization of writing (beginning with syllabic period and ending with the alphabetic period) (Ferreiro, 1991). It is at this phase that children use the syllabic hypothesis where a letter is used to represent one syllable and invented spelling is evident in the children's work. Invented spelling indicates an important breakthrough because it demonstrates that a child's early knowledge of letters, sounds, and their correspondence to make words, is beginning to unfold metacognitively (Welsch et al., 2003). The deliberate attention to the individual sounds in words required for invented spelling may provide children with a greater understanding of the phonetic structure of words which might be related to children's

phonological awareness, such as rhyming, blending, and segmenting. This correspondence between oral and written language may develop even earlier in Spanish-speaking children because of the transparent orthography and small number of vowel sounds in the Spanish language (de Manrique & Signorini, 1994). This attention to mapping of the sound to print is what Whitehurst and Lonigan (2001) indicate facilitates the bridge between written letters and sound. These skills, described as inside-out processes, are text-dependent. Some research suggests that invented spelling and contacts with conventional print can cultivate phonological awareness and grapheme-phoneme correspondence (Craig, 2006; Clarke, 1998; Ehri & Sweet, 1991). Not only does it cultivate phonological awareness, it is also an index of the level of development in phonological awareness, (e.g., syllabic, onset/rime or phonemic level). For example, preschool children who could correctly write their names were the same children who did best on tasks examining awareness of rhyme and beginning sounds, knowledge of uppercase letters, and awareness of the concepts and the functions of print (Gill, 1992; Orton, 2000; Welsch et al., 2003). Bloodgood (1999) discovered that children who had the most fluent signatures also had good control of the alphabet, invented spellings that included initial and final consonants, and more developed decoding abilities. The value of early writing cannot be underestimated (Invernizzi, Abouzeid & Gill, 1994). Studies suggest that children who produced the most writing both invented and conventional, became the best spellers and readers in the later grades (Morris & Perney, 1984; Henderson & Templeton, 1986; Lombardino, Bedford, Fortier, Carter & Brandi, 1997).



In summary, phonological awareness, especially the most segmented level (i.e. phonemic awareness), contributes to early writing within and across languages (e.g., English and Spanish). Phonemic awareness and invented spelling support each other by providing both the auditory and visual stimuli that allow children to construct their own learning through writing in meaningful ways. Even for very young children, early writing may be an important contributor to subsequent forms of conventional writing and reading. For children not proficient in English, practice with writing in their first language may develop the skills that may transfer to their second language (Davis, et al., 1999; Lanauze & Snow, 1989; Durgunoğlu et al., 1993).

#### *Cross-Linguistic Transfer of Literacy Skills*

If bilingual students have a strong foundation in their first language, they are more likely to transfer language and literacy skills from their first language to their second language (Cummins, 1979). These language and literacy skills include phonological awareness, word reading, comprehension strategies, and spelling strategies (August, Calderon & Carlo, 2002; Rubin & Carlan, 2005; Tabors et al., 2003). In 2006, August and Shanahan reported that writing skills in one language are available for application in a second language. These findings support Cummins's (1979) interdependence hypothesis and common underlying proficiencies (CUP) model. Cummins's common underlying proficiency model of bilingualism can be represented as two icebergs separated above the surface (visibly different in outward presentation), but under the surface, the two icebergs join and function together. In other words, languages work through the same central processing system (Leafstedt & Gerber, 2005). Several

studies have been conducted to support cross-linguistic transfer, especially when the languages share similar phonological and morphological systems (August & Shanahan, 2006).

In 1993 Durgunoğlu et al. were among the first researchers to scientifically examine whether abilities in a first language could transfer to reading in a second language. Their sample included 31 Spanish-speaking, first-grade students from two school districts. They found that the best predictors of performance in English word recognition and pseudoword reading was Spanish phonological awareness and Spanish word recognition. Lopez and Greenfield (2004) wanted to extend these findings to younger children in preschool. In their sample of 100 Spanish-speaking Head Start children, they found that phonological awareness in English was directly related to phonological awareness in Spanish. This supports Durgunoğlu's research with older children in 1993.

In 1998, Durgunoğlu examined how language and literacy evolved in children who were in transitional bilingual first-grade classrooms. Durgunoğlu found that phonological awareness was important to the development of language and literacy skills in both languages and that the development of both languages was very similar. The children in the sample used their Spanish skills to help them in developing their English literacy skills. However, phonological awareness does not require complete mastery at all levels before cross-linguistic transfer is detected. Cisero and Royer (1995) examined this with the first graders in their sample and found that that cross-language transfer was evident in skills within the levels of phonological awareness that are still developing. In

their study, detection of rime came before detection of initial and final phoneme and the same progress in Spanish was seen in phonological awareness progress in English. These researchers found a cross-language transfer on the initial phoneme detection task that improved general performance in English. Because phonological awareness is an abstract cognitive ability and not language specific, this cross-linguistic transfer is independent of vocabulary in either language (Carlisle, Beeman, Davis & Spharim, 1999).

Phonological awareness not only transfers from L1 to L2 (Tabor et al., 2003) but strong phonological awareness in L1 supports higher level literacy skills (e.g. comprehension) in L2 (Lindsey, Manis & Bailey, 2003). These researchers found a significant correlation between Spanish phonological awareness and later English Passage Comprehension in their sample of 249 Spanish-speaking English-language learners in kindergarten through first grade. However, the children who showed the greatest gains were those who had a period of instruction in phonological awareness in their first language. This supports the idea that transfer of literacy skills will be enhanced when a child has received some instruction in their first language and has made a transition to their second language in reading and language skills (August et al., 2002). Cross-linguistic transfer is not only evident in the early elementary years. In fact, research with 5<sup>th</sup> graders in bilingual programs indicates that they also transfer a variety of component literacy skills from their first language to their second language (Leafstedt & Gerber, 2005).

Cross-linguistic transfer of language and literacy skills is well documented in the literature, especially for those languages that share similar phonologic structures and alphabetic orthographic systems. Of the emergent literacy skills that demonstrate cross-linguistic transfer, phonological awareness is the most studied (Dickinson et al., 2004; Durgunoğlu et al., 1993). However, to date the literature base on cross-linguistic transfer of writing skills is sparse. Therefore, this study will add to knowledge about the range of skills implicated in cross-linguistic transfer (e.g., letter and word knowledge, print concepts, sentence memory) (Lindsey et al., 2003; Tabors et al., 2003).

#### *Statement of the Problem*

Children who speak limited English are at particular jeopardy of school failure because of multiple risk factors including poorly trained teachers, ineffective instructional programs and impoverished home literacy environments that are unlikely to amend for the instructional deficiencies (Pungello et al., 1996; Carrier & Cohen, 2005; Sakash & Chou, 2007). As the population of English-language learners continues to grow, there is a documented shortage of bilingual teachers to serve them (Carrier & Cohen, 2005; Sakash & Chou, 2007). Oftentimes, the teachers who work with the ELL population are not trained to help these students develop their English language proficiency as well as master their academic subjects. Only 3% of teachers who work with ELLs had a degree in bilingual education and only 30% reported having some training on how to teach English-language learners. These teachers are less likely to be knowledgeable about effective instructional methods of educating students who are

learning English (Gruber, Wiley, Broughman, Strizek & Burian-Fitzgerald, 2002; National Center for Education Statistics, 1997).

In addition to adequately trained teachers, there is evidence that parent-child book reading, an activity that supports early language and literacy development (Larson & Verma, 1999; Dickinson & Tabors, 2001), is less common in homes of Spanish-speaking children who live in poverty compared to children who do not live in poverty (Foy & Mann, 2001). Anderson and Stokes (1984) found that Caucasian children received an average of four times as much storybook reading time as did children of Mexican American descent. In addition, in contrast to parents from low-income households, middle and upper-middle class parents report teaching their kindergarten and Grade one children to print and read words “sometimes” to “often” every week (Sénéchal, LeFevre, Thomas, & Daley, 1998). Therefore, it is unlikely that the educational deficiencies that result from poorly trained teachers will be remediated at home.

In summary, ELLs have multiple risk factors that may lead to long-term negative outcomes. However, evidence from cross-linguistic research suggests that the primary language may afford advantages in learning important interrelated early literacy skills (e.g. phonological awareness and emergent writing) in the new language. This advantage may help offset some of the disparities.

#### *Purpose of the Study*

Given the poor academic outcomes of English-language learners, the documented importance of foundational literacy skills, the research evidence that

supports the transfer of literacy skills across languages, and the lack of research on emergent writing with ELLs, this study has four principal aims. First, it strives to contribute to the research base by generalizing findings from this unique sample to the larger population of young learners. Second, it aims to explore English-language learners' pathway to early written language and moderators of this pathway. Third, it seeks to add to the current body of research on cross-linguistic transfer of early writing. Finally, this study aims to inform early intervention programs on best practices in the education of language minority children, a population that has been understudied.

### *Research Questions*

This study was designed to: (a) describe the English emergent writing skills of preschool English-language learners (b) explore the contributions of English and Spanish phonological awareness to English dictation (c) explore the contributions of English and Spanish phonological awareness to Spanish dictation (d) explore the interrelationship between the domains of phonological awareness and dictation. Thus the following research questions were developed:

#### **Research Question 1**

How do the English dictation scores on the Woodcock Johnson Test of Achievement III (WJIII) for the preschool children in the sample compare to the results of the national norms?

**Research Question 2**

What is the shared and unique variance in English Woodcock- Johnson III dictation accounted for by the phonological awareness task in English and Spanish?

**Research Question 3**

What is the shared and unique variance in Spanish Woodcock Munoz dictation accounted for by phonological awareness in English and Spanish?

**Research Question 4**

What is the nature of the interrelationship between the domains of phonological awareness and dictation in both English and Spanish?

## CHAPTER III

### METHOD

#### *Participants*

This research is part of a larger study, *Building Language Together* (Paratore & Jordan, 2007). The original idea for *Building Language Together* came from *Project EASE* (Early Access to Success in Education), a parent education intervention program for monolingual English middle and low-income families of children entering kindergarten and the preschool counterpart, *Building Language Together*. This program helps parents learn and practice pragmatic skills that will better prepare their children for the cognitive and language demands of academics. *Building Language Together* was recently translated into Spanish for use with monolingual Spanish-speaking families. The author will focus on the development and cross-linguistic transfer of emergent writing and its relationship to phonological awareness using the data from scores in 2007 and 2008; although, the larger study examines other skills related to reading, e.g., vocabulary and oral language.

The sample consists of 110 preschool children from low-income/Spanish-speaking families attending three preschool programs in southwest Texas. The children were identified as ELL by using the same identification method that is used in most public schools - the Home Language Survey completed by the parents at school entry. Texas was selected because of the availability of subjects, the large ELL enrollment, and poor educational outcomes for these students, especially in writing. For example, in Texas, only 13% of 4<sup>th</sup> grade ELL (compared to 31% of Caucasian students) and 2% of



eighth grade ELL students (compared to 27% of Caucasian students) reached advanced proficiency in English reading and language arts (Kindler, 2002). In addition, performance results from the Spring 2010 administration of the TELPAS (Texas English Language Proficiency Assessment System) indicates that while 47% of students earned an advanced high rating in reading, only 21% earned the same rating in writing. These poor outcomes emphasize the need for research and development of alternate instructional practices that could improve educational outcomes for the ELL population.

At the beginning of the present study, center directors were contacted and face-to-face meetings were held to review the research program and answer questions. After the meeting, center directors submitted a letter of support and center managers distributed bilingual fliers to promote the study and recruit participants. Spanish informational letters and informed consent forms were sent home with every child. Before signing the informed consent, parents spoke to a bilingual research interviewer who was screened for dual language proficiency and trained on interviewing techniques by the principal investigator. Once the consent was submitted, the trained bilingual research interviewer contacted the families to answer questions, explain the procedure and verify eligibility status, (i.e. three year-olds and children who did not speak Spanish were not eligible for the study). If the parents agreed to continue with the study, the research interviewer scheduled a time that was convenient for the parents to conduct the interview. Items from the 25 minute phone interview included questions about family composition, socioeconomic status, level of acculturation, country of origin, attitudes/expectations related to English acquisition and home literacy/language

practices and resources. The parents could complete the interview in English or Spanish although all chose the Spanish version. To promote participation in the study, the children received four engaging picture books (two of each language) and the teachers and center managers received a \$5 Starbucks gift certificate to complete their respective surveys.

### *Measures*

Both formal and informal assessments were used in this study. For the larger study, an informal researcher-developed parent interview and teacher survey was used to supplement normative data. On the survey, teachers indicated their level of agreement on 14 items related to second language acquisition and instruction. Then, they indicated how frequently they engage in specific educational practices. The parent interview had 75 items related to home literacy and language practices, level of acculturation, attitudes about language acquisition and parent's educational history.

In contrast to the informal assessments, the formal assessments are relevant to the smaller-scale study. Formal standardized assessments including the *Woodcock-Johnson Tests of Achievement (WJ-III)*, *Woodcock-Muñoz Prueba de Aprovechimiento* and the *Phonological Awareness Task* – English and Spanish versions were used to address research questions. The WJIII is designed for children, adolescents, and adults ranging from two through 90. It has two alternate forms (A & B) each made up of two batteries: a standard battery (tests 1-11, supplemental test 12 and two writing scales) and an Extended Battery (tests 13-19 and supplemental tests 20-22). The Woodcock-Munoz Prueba de Aprovechimiento is a parallel Spanish assessment. The norming sample for

the age group of interest included 1,143 participants with ages two through five years. Demographic characteristics are similar to United States census in relation to community size, sex, race, and ethnicity. In the technical manual, the authors report underrepresentation of parents with a high school education and overrepresentation of parents with more than a high school education. In another words, the parents in the normative sample were more educated than parents in the US population. Regional differences were also noted, i.e. the South was overrepresented and the Midwest and West underrepresented (Woodcock, McGrew & Mather, 2001). Most of the WJ-III subtests have a three-year test reliability of .80 or higher, some are .90 or higher. For the purposes of this study, only the dictation subtest was used. A Spanish version of this subtest from the Woodcock-Muñoz Prueba de Aprovechimiento was used to assess the children's dictation skills in their dominant language. The median reliability for the Spanish subtest is .86. The 59 items on the dictation task assess a student's ability to draw marks and letters and spell dictated words. Early items assess prewriting skills, such as making marks, tracing letters or writing letters after the examiner models for the student. Later items use an auditory stimulus ("make a B") as a student prompt. Word dictation is not required until item 15 on Form A and item 14 on Form B.

*Phonological Awareness Task - English and Spanish Versions.* The Phonological Awareness Test and Habilidad Fonológica are English and Spanish tests, respectively, used to measure children's phonological awareness. They were developed for the research study *Early Childhood Study of Language and Literacy Development of Spanish-speaking children, subproject 1* of *Acquiring Literacy in English*:

Crosslinguistic, Intralinguistic, and Developmental Factors (Harvard University and Center for Applied Linguistics, 2002a). These tests are appropriate for children from preschool to 2<sup>nd</sup> grade. The two versions measure the same skills, but have been constructed separately to demonstrate the child's phonological abilities in each language. Scoring rules minimize subjectivity by assigning one point for correct answers and zero points for incorrect answers. Partial credit is not assigned. It has five subtests: rhyme recognition, rhyme production, initial phoneme recognition, sentence segmenting, and syllable segmenting. Rhyme recognition has two practice items followed by six test items. The children looked at target and alternate pictures. To receive credit, they must select the picture that rhymes with the spoken word, choosing between two pictures for test items one through three, and four pictures for test items four through six. *Rhyme Production* has two practice items and four test items that assess rhyme production of either real or pseudowords. In *Initial Phoneme Recognition*, the child attempted to match pictures of words with the same initial sound. *Sentence Segmenting* has two practice items and five test items. The children used colorful tiles to indicate the number of words in an examiner read sentence. Similarly, in *Syllable Segmenting*, the children used the tiles to indicate the number of syllables in an examiner read word.

Rasch analysis produced a reliability coefficient of .68 (analogous to a correlation coefficient) on the English version of the test and a .59 for the Spanish version. The low reliability coefficients could result from the young age of the examinees. When compared to older children, young children's performance is more variable and vulnerable to extraneous variables such as comfort level with the examiner,

unfamiliarity with standardized tests, physiological needs, and limited receptive/expressive language skills (Sutcliffe, Soo & Barnes, 2010). Finally, rank order correlations indicated that each subtest contributes positively to the total score for both versions of the test.

### *Procedures*

The principal investigator selected and trained graduate students to serve as subject examiners. After the training, the examiners practiced administering the subtests with each other and were evaluated by the principal investigator for accuracy of implementation. In the fall of 2007, the children's phonological awareness and dictation skills were tested in both languages by different examiners. First, a native Spanish speaker tested them in Spanish and on a subsequent occasion a monolingual English speaker tested them in English. The order of testing is purposefully providing a safer testing environment by first testing the children in their dominant language. As gifts for participating, the children received engaging picture books in English and Spanish. Depending on participant responses, testing sessions lasted between 15 to 25 minutes. Although most of the children were tested by the summer 2008, the few who were not tested were to be tested at the beginning of the school year. However, in September 2008 the Houston site was affected by Hurricane Ike. The hurricane caused substantial damage to one of the major sites in the Houston area and classes were interrupted until a makeshift site was secured. Therefore, a small number of students from the 2007 sample were not included in the 2008 sample. In addition, some of the examiners from the initial testing were replaced with new team members. A miscommunication in training led to

substantial attrition of the 2008 phonological awareness test because some of the examiners administered the dictation test only and not the phonological awareness test. For these reasons, the 2008 sample is smaller and less useful at demonstrating patterns between the variables of interest.

### *Analytic Strategy*

First descriptive statistics were reported to ensure a bivariately normal sample. Second, the researcher conducted a zero order correlation matrix between English and Spanish literacy scores to examine statistically significant relationships. In addition, diagnostics indicated the absence of outliers, skewness, and kurtosis; therefore, ensuring that statistical assumptions were not violated. To gain a better understanding of the emergent writing practices of second-language learners, the researcher chose a non-experimental quantitative research design and commonality regression analysis (CA). Because independent variables are often related, it is often difficult to sift through the data to look at real results (Rowell, 1996; Nimon, 2010). An advantage of commonality analysis is that it considers both 1) the amount of unique variance that each independent variable contributes to the variance of the dependent variable without input from the other independent variable and 2) the amount of shared variance. In other words, it fragments the squatted multiple correlation to determine the unique and shared explained variance of the dependent variable with each independent variable (Gonzalez & Uhing, 2008). In addition to commonality analysis, the relationships between the independent variables (Spanish phonological awareness and English phonological awareness) and the dependent variables (dictation in Spanish and English) were explored using canonical

correlation analysis (*CCA*), a multivariate technique that examines the relationship between two variable sets with underlying similar constructs (Sherry & Henson, 2005).

### *Data Analysis*

Using Excel and SPSS software, this study used a commonality regression analysis to determine the variance in Spanish and English emergent writing that can be accounted for uniquely or in combination by English and Spanish phonological awareness. Commonality regression analysis is a method of separating variance that allows researchers to assess the “true” effect of independent variables on dependent variables (Rowell, 1996; Zientek & Thompson, 2010). It enables the decomposition of the squared multiple correlations ( $R^2$ ) into separate components that show the variance in a variable that can be accounted for by the two separate predictor variables (Zientek & Thompson, 2010). The formulas used to determine the unique and common variance are entered into a Microsoft Excel spreadsheet for computation (Gonzalez & Uhing, 2008). Because commonality regression analysis takes into account the joint or common explanatory power of predictor variables, an issue most likely when looking at the same skill in different languages, this statistical method is an appropriate fit for the present study.

The commonality regression analysis was followed by a canonical correlation analysis (*CCA*) to determine the interrelationships between the independent variables (i.e. English and Spanish phonological awareness) and the dependent variables (i.e. English and Spanish dictation). The use of *CCA* is important to the current study because the use of a multivariate method such as this helps to control for Type I error

(Zientek & Thompson, 2010). A Type I error relates to finding a statistically significant relationship in the variables of interest in the sample when no such relationship exists in the population. Additionally, *CCA* provides valuable information about the interrelationships between the two sets of variables in the current study. *CCA* is the best way to quantify the magnitude and strength of the relationship between two sets of variables, when more than one dependent variable is present (Kinnear & Gray, 2006).

To investigate the interrelationship between two sets of variables, *CCA* creates canonical functions and extracts as many functions as the smallest number of variables. For the current study, there are two variables in one variable set (English phonological awareness and Spanish phonological awareness) and two variables in the second set (English emergent writing and Spanish emergent writing) so two canonical functions were extracted. The purpose of the canonical function is to enable synthetic scores to be derived by applying the functions to the observed scores. Synthetic scores are an estimate of the latent construct; *CCA* determines the linear combinations of the synthetic scores maximally correlated (Sherry & Henson, 2005). The interrelationships are thus interpreted by measuring the relative contribution of each variable to the canonical functions that are extracted. The current study investigated the structure coefficients, which are the Pearson product-moment correlations between the scores on the measured variable and the synthetic variable (the canonical correlation coefficient). *CCA* will provide more information about phonological awareness as it relates to early writing in English and Spanish. Figure 1 provides a diagram of the elements used in the canonical correlation analysis.



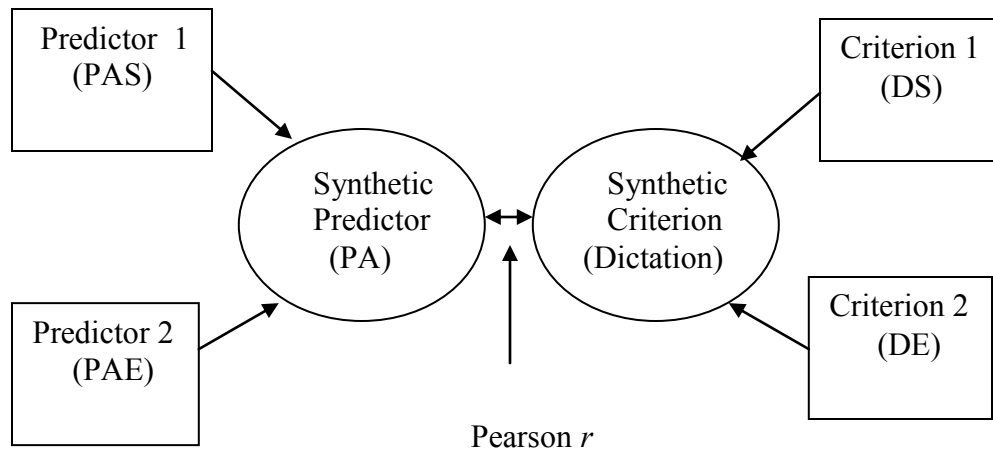


Figure 1

*Canonical Correlation Analysis Diagram*

The diagram represents the first canonical function in a canonical correlation analysis with two predictors and two criterion variables. The canonical correlation is the simple Pearson  $r$  between the two synthetic variables that are synthetically and linearly combined from the observed variables. PAS= phonological awareness Spanish; PAE= phonological awareness English; PA=phonological awareness; DS= Dictation Spanish; DE=Dictation English (Sherry & Henson, 2005).

## CHAPTER IV

### RESULTS

This section summarizes the analyses conducted in the present study. Included in this section are the descriptive statistics of the study, the correlation matrix, the commonality regression analysis (*CA*) and the canonical correlation analysis (*CCA*).

#### *Descriptive Statistics*

Table 1 presents the fall 2007 and summer 2008 results of the phonological awareness and dictation task in English and Spanish. The table provides minimum and maximum scores and the means and standard deviations for each of the subtests. As shown in Table 1, on the phonological awareness task, the sample size *is* much lower for the 2008 Spanish administration ( $n=32$ ) and the 2008 English administration ( $n=17$ ) because some of the examiners mistakenly failed to administer this subtest. The table also demonstrates that when compared to the number of scores in 2007, *n* for the dictation task is slightly lower in the 2008 Spanish administration ( $n=88$ ) and in the 2008 English administration ( $n=84$ ). This drop in the number of dictation scores resulted from student absences or student mobility.

Table 1

*Descriptive Statistics of 2007 and 2008 English and Spanish Phonological Awareness and Dictation Results*

Measure	n	Minimum	Maximum	Mean	Standard Deviation
PAS07	101	0	18	6.48	4.46
PAS08	32	0	18	8.29	4.94
PAE07	103	0	6	2.11	1.85
PAE08	18	0	6	3.39	1.75
DictS07	104	1	17	6.73	2.92
DictS08	91	0	18	8.58	2.85
DictE07	106	0	13	7.47	2.12
DictE08	89	0	15	8.79	2.57

Note: PAtotalS07 = Spanish 2007 Habilidad Fonológica (Harvard University and Center for Applied Linguistics, 2002b). PAtotalS08= Spanish 2008 Habilidad Fonológica ( University and Center for Applied Linguistics, 2002b). PAtotalE07 = English 2007 Phonological Awareness Test (Harvard University and Center for Applied Linguistics, 2002a). PAtotalE08 = English 2008 Phonological Awareness Test (Harvard University and Center for Applied Linguistics, 2002a). DictS07 = Spanish 2007 Ortografía Subtest (Muñoz-Sandoval, Woodcock, McGrew, Mather, 2005). DictS08 = Spanish 2008 Ortografía Subtest (Muñoz-Sandoval, Woodcock, McGrew, Mather, 2005). DictE07 = English 2007 Spelling Subtest (Woodcock, McGrew & Matthew, 2001). DictE08 = English 2008 Spelling Subtest (Woodcock, McGrew & Matthew, 2001).

### *Correlational Statistics*

The Pearson product-moment correlations between the eight measures that were used in the study and summarized in Table 1 are shown in Table 2. The correlations were highest for DictE07/PAE08; DictE07/DictE08; DictS07/DictS08; PAE08/DictE08; DictE07/DictS08; DictS07/DictE08; PAS08/DictE08 and DictS07/DictE07. Significant correlations were found at the  $p < .01$  level for the following pairs: DictS08/DictS07; DictE07/DictS08; DictE07/DictS07; DictE08/DictS07; DictE07/DictE08; PAE07/DictS07; PAE07/DictS08; PAE07/DictE07; PAE07/DictE08; PAE08/DictE07; and PAE08/DictE08. A significant correlation at the  $p < .05$  level was found between the measures of DictS07 and PAE08.

The strength of the relationship between a student's English Dictation score in 2007 and their subsequent English Phonological Awareness score in 2008 ( $r = .82$ ) was surprising because the relationships between the constructs measured by these subtests was not expected to be that large. According to Pallant (2007), a correlation between  $r = .50$  and  $1.0$  is considered large and increases the ability of either subtest to predict the value of the other score. On the other hand, the strength of the relationship between 2008 Dictation scores in Spanish and English was expected given the hypothesized cross-linguistic occurrence that is supported by previous findings from other research studies (López & Greenfield, 2004; Leafstedt & Gerber, 2005; Tabors et al., 2003).

Table 2

*Correlation Matrix*

Measure	PAS07	PAS08	PAE07	PAE08	DictS07	DictS08	DictE07	DictE08
PAS07	1.00	.02	.50	.28	.32	.36	.36	.52
PAS08	.02	1.00	.02	-.55	.39	.60	.42	.36
PAE07	.50	.02	1.00	.41	.37	.35	.31	.48
PAE08	.28	-.55	.41	1.00	.50	.32	.82	.67
DictS07	.32	.39	.37**	.50*	1.00	.71	.61	.65
DictS08	.36	.60	.35**	.32	.71**	1.00	.66	.71
DictE07	.36	.42	.31**	.82**	.61**	.66	1.00	.75
DictE08	.52	.62	.48**	.67**	.65**	.71**	.75**	1.00

Note: PAtotalS07 = Spanish 2007 Habilidad Fonológica (Harvard University and Center for Applied Linguistics, 2002b). PAtotalS08= Spanish 2008 Habilidad Fonológica (Harvard University and Center for Applied Linguistics, 2002b). PAtotalE07 = English 2007 Phonological Awareness Test (Harvard University and Center for Applied Linguistics, 2002a). PAtotalE08 = English 2008 Phonological Awareness Test (Harvard University and Center for Applied Linguistics, 2002a). DictS07 = Spanish 2007 Ortografía Subtest (Muñoz-Sandoval, Woodcock, McGrew, Mather, 2005). DictS08 = Spanish 2008 Ortografía Subtest (Muñoz-Sandoval, Woodcock, McGrew, Mather, 2005). DictE07 = English 2007 Spelling Subtest (Woodcock, McGrew & Matthew, 2001). DictE08 = English 2008 Spelling Subtest (Woodcock, McGrew & Matthew, 2001)

\*\* Correlation is significant at the 0.01 level (2-tailed)

\*Correlation is significant at the 0.05 level (2-tailed)

### *Commonality Regression Analysis*

To gain a better understanding of the predictive value of the independent variables, commonality analysis is helpful at breaking down the amount of explained variance of predictive ability shared by two or more independent variables (English and Spanish Phonological Awareness) or uniquely by each variable on the dependent variables (Dictation Spanish and Dictation English). For each independent variable, commonality regression analysis indicates how much of the variance of the dependent variable is unique to the predictor and how much of the predictors explanatory power is common to the other predictor variables (Daniel, 1989a). Using commonality regression analyses, the following tables summarize the unique and common parts of shared variance ( $R^2$ ) of the independent variables on the dependent variables.

Table 3 presents the concurrent (2007 results) common and unique variance of the Dictation Spanish 2007 scores as accounted for by predictor variables (Dictation English 2007, Phonological Awareness Spanish 2007 and Phonological Awareness English 2007) uniquely and in combination with each other. Results reflected that the independent variables accounted for minimal to moderate amounts of variance in the Dictation Spanish 2007 scores. The largest unique variance was accounted for by the Dictation English 2007 variable which accounted for 37% of the variance in Dictation Spanish 2007. The Dictation English 2007 in combination with the other variables also accounted for the greatest amount of shared variance (16%) in Dictation Spanish 2007 for a total variance accounted for by Dictation English 2007 of 53% - a sizeable amount of accounted variance.

Table 3

*Unique and Common Components of Shared Variance ( $R^2$ ) of Concurrent Spanish 2007*

---

Predictor	Predictor		
	DictE07	PAS07	PAE07
Unique DictE07	0.372		
Unique PAS07		0.105	
Unique PAE07			0.136
Common DE07 PAS07	0.025	0.025	
Common DE07 PAE07	0.028		0.028
Common PAS07 PAE07		0.015	0.015
Common DE07 PAS07 PAE07	0.063	0.063	0.063
Total	0.538	0.208	0.242
Unique	0.372	0.105	0.136
Common	0.166	0.103	0.106

---

Note: DE07 = Dictation English 2007; PAS07 = Phonological Awareness Spanish 2007; PAE07 = Phonological Awareness English 2007; Dependent Variable = DS07

Table 4 on the following page presents the commonality regression analysis for the dependent variable of Dictation Spanish 2008 by the independent predictors from 2007. This is a longitudinal perspective at the relationship between predictors in 2007 and performance in 2008. Longitudinally, the predictor variables accounted for minimal to moderate amounts of variance in the Dictation Spanish 2008 variable. However, as expected, the largest unique variance was accounted for by the Dictation Spanish 2007 variable. This variable accounted for 46% of the total variance and this is a sizeable amount. This is more than any of the variance accounted for by other variables, uniquely or in combination. In addition, the Dictation Spanish 2007 in combination with the other variables also accounted for the greatest amount of shared variance (12%) in Dictation Spanish 2008. This is a total variance accounted for by Dictation Spanish 2007 of 58%. This is a sizeable amount of variance accounted for by a predictor variable and can be important for identifying variable of interest.



Table 4

*Unique and Common Components of Shared Variance ( $R^2$ ) of Longitudinal Spanish Outcomes*

---

Predictor	Predictor		
	DictE07	PAS07	PAE07
Unique DictE07	0.463		
Unique PAS07		0.152	
Unique PAE07			0.080
Common DE07 PAS07	0.025	0.025	
Common DE07 PAE07	0.028		0.028
Common PAS07 PAE07		0.015	0.015
Common DE07 PAS07 PAE07	0.063	0.063	0.063
Total	0.579	0.255	0.186
Unique	0.463	0.152	0.080
Common	0.116	0.103	0.106

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Note: DE07 = Dictation English 2007; PAS07 = Phonological Awareness Spanish 2007;

PAE07 = Phonological Awareness English 2007

Dependent Variable = Dictation Spanish 2008

Table 5 presents the results of the concurrent commonality regression analysis for the dependent variable of Dictation Spanish 2008. These results only look at the children's performance on the variables of interest in 2008. The predictor variables accounted for minimal to moderate amounts of variance in the Dictation Spanish 2008 variable. However, the largest unique variance was accounted for by the Dictation English 2008 variable which accounted for 16% of the variance in the Dictation Spanish 2008. This amount is minimal to moderate and can be used to further identify and understand the variables of interest. On the other hand, the Dictation English 2008 in combination with the other variables also accounted for the greatest amount of shared variance in Dictation Spanish 2008 and a minimal to moderate total accounted variance when compared to the other variables in the study. Specifically, it accounted for 12% of the shared variance in Dictation Spanish 2008 and a total variance accounted for by this variable of 28%.

Table 5

*Unique and Common Components of Shared Variance ( $R^2$ ) of Concurrent Spanish 2008*

---

Predictor	Predictor		
	DictE08	PAS08	PAE08
Unique DictE08	0.161		
Unique PAS08		0.006	
Unique PAE08			0.117
Common DE08 PAS08	0.025	0.025	
Common DE08 PAE08	0.028		0.028
Common PAS08 PAE08		0.015	0.015
Common DE08 PAS08 PAE08	0.063	0.063	0.063
Total	0.277	0.109	0.223
Unique	0.161	0.006	0.117
Common	0.116	0.103	0.106

---

Note: DE07 = Dictation English 2007; PAS07 = Phonological Awareness Spanish 2007;

PAE07 = Phonological Awareness English 2007

Dependent Variable = Dictation Spanish 2008

Table 6 presents the results of the commonality regression analysis for the Dictation English 2007 dependent variable. This perspective summarizes the children's performance on the Woodcock Johnson Dictation Task in English during the 2007 administration period. The predictor variables (Dictation Spanish 2007, Phonological Awareness Spanish 2007 and Phonological Awareness English 2007) accounted for minimal to moderate amounts of variance in the dependent variable (Dictation English 2007). On the other hand, the largest unique variance was accounted for by the Dictation Spanish 2007 variable which accounted for 37% of the variance in the children's performance on the English dictation task in 2007. This amount of variance is considered moderate and can be useful for identifying and understanding the variables of interest. The Dictation Spanish 2007 in combination with the other variables also accounted for the greatest amount of shared variance (17%) in Dictation English 2007 for a total variance accounted for by Dictation Spanish 2007 of 54%.

Table 6

*Unique and Common Components of Shared Variance ( $R^2$ ) of Concurrent English 2007*

---

Predictor	Predictor		
	DictS07	PAS07	PAE07
Unique DictS07	0.372		
Unique PAS07		0.109	
Unique PAE07			0.072
Common DS07 PAS07	0.025	0.025	
Common DS07 PAE07	0.028		0.028
Common PAS07 PAE07		0.015	0.015
Common DS07 PAS07 PAE07	0.063	0.063	0.063
Total	0.538	0.212	0.178
Unique	0.372	0.109	0.072
Common	0.166	0.103	0.106

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Note: DS07 = Dictation Spanish 2007; PAS07= Phonological Awareness Spanish 2007;

PAE07 = Phonological Awareness English 2007.

Dependent Variable = Dictation English 2007

Table 7 presents the results of the commonality regression analysis for the dependent variable of Dictation English 2008 by independent predictors from 2007 – a longitudinal look at the relationship between predictors in 2007 and performance in 2008. Longitudinally, the predictor variables accounted for small to moderate amounts of variance in the dependent variable. The largest unique variance was accounted for by the Dictation Spanish 2007 variable which accounted for 39% of the variance in the dependent variable. This was followed by the Phonological Awareness Spanish 2007 variable which accounted for 23% of unique variance in Dictation English 2008. Finally, the variable that accounted for the least amount of variance was Phonological Awareness English 2007 which accounted for 20% of the variance. These amounts of unique accounted variance are greater than the variance accounted for if the variables were combined. This potentially provides evidence of cross-linguistic transfer because the greatest contribution to growth in Dictation English skills in 2008 was Dictation Spanish skills in 2007.

Table 7

*Unique and Common Components of Shared Variance ( $R^2$ ) of Longitudinal English 2008*

---

Predictor	Predictor		
	DictS07	PAS07	PAE07
Unique DictS07	0.393		
Unique PAS07		0.230	
Unique PAE07			0.196
Common DE07 PAS07	0.025	0.025	
Common DE07 PAE07	0.028		0.028
Common PAS07 PAE07		0.015	0.015
Common DE07 PAS07 PAE07	0.063	0.063	0.063
Total	0.559	0.333	0.302
Unique	0.393	0.230	0.196
Common	0.166	0.103	0.106

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Note: DE07 = Dictation English 2007; PAS07 = Phonological Awareness Spanish 2007;

PAE07 = Phonological Awareness English 2007.

Dependent Variable = Dictation English 2008

Finally, Table 8 presents the results of the commonality regression analysis for the dependent variable of Dictation English 2008. The table provides data that summarizes concurrent English skills including both dictation and phonological awareness. The predictor variables accounted for moderate amounts of variance in the dependent variable. The largest unique variance was accounted for by Dictation Spanish 2008 and Phonological Awareness English 2008. Specifically, both of these predictor variables (2008 Dictation Spanish and 2008 Phonological Awareness English) accounted for 16% of the variance of the dependent variable of Dictation English 2008. The Phonological Awareness Spanish 2008 variable accounted for 15% of the variance of the dependent variable of Dictation English 2008. It is important to note that the variance accounted for by the variables (2008 Dictation Spanish and 2008 Phonological Awareness English) uniquely is more than the variance that would be accounted for if the variables were combined with each other.



Table 8

*Unique and Common Components of Shared Variance ( $R^2$ ) of Concurrent English 2008*

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Predictor	Predictor		
	DictS08	PAS08	PAE08
Unique DictS08	0.161		
Unique PAS08		0.147	
Unique PAE08			0.155
Common DS08 PAS08	0.025	0.025	
Common DS08 PAE08	0.028		0.028
Common PAS08 PAE08		0.015	0.015
Common DS08 PAS08 PAE08	0.063	0.063	0.063
Total	0.277	0.250	0.261
Unique	0.161	0.147	0.155
Common	0.116	0.103	0.106

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Note: DE08 = Dictation English 2007; PAS08 = Phonological Awareness Spanish 2008;

PAE08 = Phonological Awareness English 2008.

Dependent Variable = Dictation English 2008

### *Canonical Correlation Analysis*

Canonical correlation analysis (*CCA*) measures the linear relationship between two multidimensional variables. It is a multivariate statistical model that assists the examination of interrelationships between multiple independent variables and multiple dependent variables. It creates two sets of variables and identifies parts of one set of variables that are most highly related linearly to the parts of the other set of variables (Chacko, 1986). In the present study Wilks' lambda ( $\lambda$ ) was used to evaluate the statistical significance of the full canonical model. For 2008, the full model was not statistically significant. This may have been impacted by the factors already mentioned, (i.e. aftereffects of Hurricane Ike in 2008, student mobility, and fewer students sampled on the 2008 phonological awareness task). Therefore, it was not further analyzed in the present study because the attrition of participants lead to numerical values that cannot be interpreted. However, the results are summarized in Table 9. Note that 2008 Wilks' lambda ( $\lambda$ ) of .48 and  $F(4,16) = 1.77, p = .18$ .

Table 9

*Canonical Solution for Predicting Dictation for Functions 1 and 2 in 2008*

<i>Variable</i>	Function 1			Function 2			<i>h<sup>2</sup>(%)</i>
	<i>coef</i>	<i>r<sub>s</sub></i>	<i>r<sub>s</sub><sup>2</sup>(%)</i>	<i>coef</i>	<i>r<sub>s</sub></i>	<i>r<sub>s</sub><sup>2</sup>(%)</i>	
DSRS08	-.91	<u>-.65</u>	42%	.54	.75	56%	98%
DERE08	.80	<u>.50</u>	25%	.69	<u>.86</u>	74%	99%
<i>Covariate</i>	<i>coef</i>	<i>r<sub>s</sub></i>	<i>r<sub>s</sub><sup>2</sup>(%)</i>	<i>coef</i>	<i>r<sub>s</sub></i>	<i>r<sub>s</sub><sup>2</sup>(%)</i>	<i>h<sup>2</sup>(%)</i>
PAS08	-.38	<u>.24</u>	6%	1.12	<u>-.96</u>	92%	98%
PAE08	1.15	<u>.95</u>	90%	-.29	<u>.32</u>	10%	100%

However, in 2007 the results of the full canonical model were statistically significant with a Wilks' lambda ( $\lambda$ ) of .81,  $F(4, 182) = 5.03, p < .001$ . With the Wilks' lambda ( $\lambda$ ) we are also able to calculate an effect size ( $1 - \lambda$ ) for the full model. This effect size can be interpreted like the multiple  $R^2$  in regression, as a portion of the variance shared by the variable sets across all functions. The effect size was  $1 - .81 = .19 = R^2$ . For 2007, thus we have a statistically significant full model and what may be considered a small effect size. Next we evaluated each function (root) separately along with its canonical correlation. The first function is created to maximize the canonical correlation

between the two synthetic variables. The remaining variance is then used to maximize the second canonical correlation. According to Sherry and Henson (2005) only functions that explain a reasonable amount of variance between the variables are interpreted. In the present study, root one had a  $CCA=.42$  with an  $r^2=.18$ . Root two had a  $CCA=.12$  with an  $r^2=.01$ . Thus we only interpret root one. Root two was weak thus it does not warrant interpretation. Next the functions were tested in hierarchical fashion with the full model tested first (Functions 1-2) then Functions 2-2. Results showed that only the full model was statistically significant  $p<.001$ . The cumulative effect of Functions 2-2 was not statistically significant. Thus the relationship between the variable sets and effect sizes is captured only by the full model. For the 2007 results, one multidimensional variable includes Dictation scores in English and Spanish and the other multidimensional variable includes phonological awareness scores in English and Spanish. Because there are two dependent variables, two separate canonical functions were derived (Roots 1 and 2). As recommended by Sherry and Henson (2005), the structural coefficients above .45 are underlined for emphasis. Looking at Function 1 coefficients, the relevant criterion variables were DSRS07 and DERE07. This was supported by the large squared structural coefficients which indicated a large amount of variance in both DSRS07 and DERE07 contribute to the synthetic variable. Notably, DERE07 had a modest canonical function (.38) compared to DSR07 (.72). This was likely caused by multicollinearity shared by the variables. Table 10 summarizes the findings. Results for the predictor set indicate that both PAS07 and PAE07 contributed to the predicted synthetic variable so that both PAS07 and PAE07 were positively related to the synthetic predictor variable.

These results are generally supportive of the theoretical relationship between phonological awareness and dictation.

The coefficients in Table 10 of Function 2 suggest that only DERE07 was relevant (1.20). Notably, although not relevant, DSRS07 had an inverse relationship to DERE07. As for the predictor set in Function 2, both PAS07 and PAE07 have an inverse relationship. Because the structural coefficient of PAS07 was positive, it had an inverse relationship to DSRS07 and a positive relationship to DERE07. PAE07 had a linear relationship to DSRS07 and inverse relationship to DERE07.

Table 10

*Canonical Solution for Predicting Dictation for Functions 1 and 2 in 2007*

<i>Variable</i>	<i>Function 1</i>			<i>Function 2</i>			
	<i>coef</i>	<i>r<sub>s</sub></i>	<i>r<sub>s</sub><sup>2</sup>(%)</i>	<i>coef</i>	<i>r<sub>s</sub></i>	<i>r<sub>s</sub><sup>2</sup>(%)</i>	<i>h<sup>2</sup>(%)</i>
DSRS07	.72	<u>.95</u>	90%	-1.03	-.30	9%	99%
DERE07	.38	<u>.82</u>	67%	1.20	<u>.57</u>	32%	99%
<i>Covariate</i>	<i>coef</i>	<i>r<sub>s</sub></i>	<i>r<sub>s</sub><sup>2</sup>(%)</i>	<i>coef</i>	<i>r<sub>s</sub></i>	<i>r<sub>s</sub><sup>2</sup>(%)</i>	<i>h<sup>2</sup>(%)</i>
PAS07	.56	<u>.85</u>	72%	.99	<u>.52</u>	27%	99%
PAE07	.60	<u>.87</u>	76%	-.98	<u>-.48</u>	23%	99%

## CHAPTER V

### DISCUSSION AND SUMMARY

The primary aim of this study was to gain an understanding of the relationships among variables that contribute to the development of English early writing skills in ELLs who attend preschool bilingual classrooms in Texas. The researcher was interested in 1) students' English dictation performance relative to national norms 2) the shared and unique variance in English dictation accounted for by phonological awareness in English and Spanish 3) the shared and unique variance in Spanish dictation accounted for by phonological awareness in English and Spanish and 4) the nature of the interrelationship between the domains of phonological awareness and dictation.

#### *Analysis of Results and Tentative Implications*

The first research question asked how the English dictation scores of the children in the sample compared to national norms. The dictation subtest used has a mean of 10 and a standard deviation of three; therefore, average performance falls within the range of seven to 10 subtest standard scores. With means of 7.47 and 8.79 in English 2007 and 2008 respectively, findings fail to support the hypothesis that the scores for the preschool children in the sample are lower than national norms. In other words, the distribution of scores for these children is within one standard deviation from the mean and their performance falls in the low average range. This finding may be unique to the children in the sample who were all enrolled in school for an average of eight months and thus receiving early literacy instruction. Another possibility for the unexpected finding is that the early items on the two subtests are more similar to each other than

later items more appropriate for older children. For example, making marks, tracing, marking within the confines of a predetermined area and making letters are within the first ten items of both subtests.

The second research question inquired about the shared and unique variance in English dictation accounted for by English and Spanish phonological awareness. The data supported the hypothesis that a statistically significant positive relationship would exist between Spanish and English phonological awareness and English dictation. Although the students' dictation in English was analyzed concurrently in 2007 and 2008 and longitudinally from 2007 to 2008, the researcher had a greater interest in the students' performance across time. Performance across time usually provides a more stable representation of true performance and more reliable predictions about future performance (Yee & Niemeir, 1996).

When considering commonality regression analysis, even though English phonological awareness accounted for some unique variance in English dictation, the highest unique contribution was accounted for by Spanish dictation at 0.393. Although purely speculative, it is not unreasonable to assume these findings support the phenomenon of cross-linguistic transfer of early dictation skills. In other words, the students were tapping into their Spanish dictation skills to support the development of similar literacy skills in a second language. As defined in the *Handbook of Second Language Acquisition*, cross-linguistic transfer involves the influence that arises from the similarities and differences between the target language and any other language that has been previously acquired even if it is imperfect (Odlin, 2003). When the native

language is nurtured and developed in the school, the concepts, language, and literacy skills that children learn in the cultures' dominant language can transfer to the second language (Cummins, 1991). For spelling, this is especially true for young children because at this time spelling is straightforward and follows a clear letter to sound relationship (August & Shanahan, 2006). For the students in this study, the reservoir of existing knowledge in their native language may have provided the students with an advantage when they were evaluated in their second language on a similar literacy skill. This finding tentatively supports research endorsing the practice of writing in a first language to promote the development of the same skill in a second language (Davis et al., 1999; Lanauze & Snow, 1989; Durgunoğlu et al., 1993).

The third research question inquired about the shared and unique variance in Spanish dictation accounted for by English and Spanish phonological awareness. Once again, data supports the hypothesis for a statistically significant relationship between these skills. Specifically, dictation Spanish 2008 and phonological awareness English 2007 correlated significantly at  $p < .01$ . However, even though phonological awareness accounted for some unique variance in 2008 Spanish dictation, the highest unique contribution was accounted for by 2007 Spanish dictation at 0.463. This is not surprising given that the same skill is being assessed at different points in time. Together with the results from the second research question, these results tentatively support the theoretical assumption that cross-linguistic transference may occur bi-directionally and is not a one-way phenomenon. In other words, strong phonological awareness in English can predict Spanish dictation and strong phonological awareness in Spanish can predict English



dictation. This has potential instructional implications for the value of two-way bilingual education where native speakers of both English and another language are educated in the same classroom and instructed in both languages alternately. The goal of this type of bilingual education program is for students to become balanced and fluent in both languages. Although monolinguals are the majority in the United States, bilingualism and multilingualism are becoming increasingly important in global economies.

The nature of the interrelationships between phonological awareness and dictation is the final question addressed in this study. Two separate canonical correlation analyses were conducted using the two phonological awareness predictors of the two dictation covariates to evaluate the multivariate shared relationship between the two variable sets (e.g., synthetic phonological awareness and synthetic dictation).

The results of the 2007 canonical correlation analyses support the authors' hypothesis. Results were statistically significant using the Wilks' lambda ( $\lambda$ ) = .811 criterion,  $F(4, 180) = 5.04, p < .001$ . The  $r^2$  type effect size was .790, which indicates that the 2007 canonical model explained a substantial portion, about 79%, of the variance shared between the variable sets. The dimension reduction analysis allows the research to test the arrangement of the two functions (English phonological awareness and Spanish phonological awareness) to test for statistical significance. Because only the first root (Spanish phonological awareness) was statistically significant, the implication is that the Spanish phonological awareness variable made a greater contribution to the synthetic predictor variable than the English phonological awareness variable. Similarly

the Spanish dictation variable made a greater contribution to the dictation synthetic criterion than did the English dictation variable. This finding supports the importance of the continued need to support and promote the development of a child's first language even during second language acquisition (Cummins, 1979, 1991). Cummins discovered that it takes two to three years to develop proficiency in L2 basic communication and four to 10 years to develop L2 academic skills. If English-language learners are immersed in English only classrooms, they will have less access to the content area knowledge available to their monolingual English-speaking peers. Instead, they are likely to lag further behind in academic development while learning English (Lucas & Katz, 1994). Therefore it is reasonable to assume that the most effective way to promote second language academic acquisition is through continued development of the first language. This is consistent with Lopez and Greenfield's 2004 study with young children. They found that phonological awareness in English was directly related to phonological awareness in Spanish in the 100 Spanish-speaking Head Start children in their sample. In this study, the greatest contribution to the similar underlying components of phonological awareness and dictation skills in English and Spanish was made by the child's native language. Similarly, Cummins (1991) noted that children who have a solid foundation in their native language develop stronger literacy abilities in the school language (i.e. English). This is because concepts and thinking skills are not unique to either language but rather are interdependent entities.

Another important finding is that although the variables of interest show bi-directionality, the order and focus of presentation appears to be important and relevant. It

appears that dictation is better at predicting phonological awareness a year later than phonological awareness. For example, the Correlation Matrix in Table 2 highlights that the strongest relationship ( $r=.82$ ) is between a child's English dictation score in 2007 and their English phonological awareness in 2008. However, the relationship between English phonological awareness in 2007 and English phonological awareness in 2008 was only .41; much lower than the .82 relationship. So it is reasonable to assume that an optimal way to teach and promote phonological awareness, an important foundational reading skill, may be through the added practice of dictation rather than solely phonological awareness.

The 2008 results were not statistically significant indicating that it was not possible to disentangle the variables and make them more distinguishable from each other. A possible explanation for the loss of statistical significance could be that the ceiling effect may have made it difficult to measure additional improvement in the phonological awareness skill. This ceiling effect could be a result of maturation or a year of additional schooling. Additionally, the attrition rate of participants due to the effects of Hurricane Ike and the loss of scores from a new set of examiners, who mistakenly followed a different protocol, may be contributing to these results.

In summary, findings showed that 1) research participants performed in the low average range when compared to national norms on a standardized dictation task, 2) the greatest unique contribution to 2008 English dictation was 2007 Spanish dictation; 3) the greatest unique contribution to 2008 Spanish dictation was 2007 Spanish dictation and 4)

students' Spanish literacy skills made greater contributions to the synthetic variables than did their English literacy skills.

### *Limitations*

Several limitations exist to the present study including possible underestimation of literacy skills given the age of the participants. Because the children were so young, their performance could have been impacted by numerous factors including unfamiliarity with the examiner and standardized testing, limited attention span, misunderstanding of expectations, fatigue, limited receptive and expressive language skills and test anxiety. A second limitation is that the assessments provided only two snapshots of student performance, instead of ongoing performance. It would have been useful to use formative assessment to collect a more fluid and comprehensive view of literacy development. A third limitation is that children had a different examiner for each of the four administration sessions. Although there are arguments for using different testers in order to promote the children's use of both languages, a consideration is to use the same examiner for all test administrations. This could possibly improve the children's comfort level in unfamiliar testing situations. It could also minimize variations in test administrations that might contribute to different scores. Another limitation is that the researcher used only one subtest to measure early writing and this is less reliable than using a group of subtests which tend to be less affected by extraneous variables. Finally, the children in the sample belonged to a fairly homogenous group, i.e. Mexican heritage from three schools in a circumscribed geographical location. This homogeneity may limit the generalizability of the findings to the population and may

help explain why the students scored within average on the English dictation task when compared to the national norms. Therefore, findings need to be replicated with a more diverse sample.

To summarize, the current study adds to the scarce literature base on the early writing skills of English-language preschool children who are at increased and prolonged academic risk. Although other emergent literacy skills, e.g., vocabulary, phonological awareness, letter naming, have been researched extensively as outcome variables with this and other populations, early writing and its relationship to literacy skills have received little focus. This study also augments the literature base that supports common underlying language proficiencies, interdependence of languages and a two-way route for cross-linguistic transfer of language and literacy skills. This transfer is especially applicable to alphabetic languages, e.g., English and Spanish that have wide overlap in orthographic and phonological structures especially in the early phases of reading and writing.

#### *Future Research Directions*

Although the current study provided some support for the above stated premises, this study did not investigate other important early writing skills such as invented spelling. Adding invented spelling to the normative assessment already used could potentially provide a less artificial outcome than standardized achievement testing alone. Standardized testing alone might underrepresent student performance because it is unfamiliar and anxiety provoking for children new to academic settings. In addition to exploring other early writing skills through invented spelling and normative assessment,

the addition of formative assessment such as curriculum based measurement might provide fluid and comprehensive data that gives insight into how students transition through the various stages of writing. These measures are typically administered at high frequency, e.g., weekly or bimonthly, and provide valuable information for teachers about student progress and the effectiveness of their instruction. Finally, this study failed to consider the extent of influence of early writing skills on writing in the subsequent grades where spelling cannot be derived reliably from the sounds that form them (August & Shanahan, 2006). So it would be beneficial to explore whether the relationships in the variables noted in this study vary as children develop academically. By following the students over an extended period of time, the researcher might better understand how these early constructs affect outcome variables important for academic promotion and retention, e.g., TAKS and placements in various bilingual programs, e.g., TELPAS scores. Since the research only looked at phonological awareness as the independent variable and dictation as the dependent variables, adding instruments that examine later progression of these skills, i.e. phonemic awareness and conventional writing should be considered. e.g., Woodcock-Johnson Test of Achievement, Writing Fluency and Writing Samples.

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