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# Prediction of English and Spanish Early Literacy Skills of English Language Learners in the Primary Grades

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Prediction of English and Spanish Early Literacy Skills  
of English Language Learners in the Primary Grades

by

Giselle Sanchez

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Education Specialist  
Department of Psychological and Social Foundations  
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ABSTRACT

This study explored how language, emergent literacy, and reading skills in both English and Spanish develop with a group of English language learners (ELLs) ( $n = 267$ ). Specifically, the researcher investigated what early language and literacy skills were the most important predictors of reading abilities as indicated by the Book Task in pre-kindergarten through first grade. Early language and literacy skills were assessed utilizing subtest from the Woodcock Language Proficiency Batter - Revised, the Woodcock Language Proficiency Battery - Revised – Spanish Form and the Phonological Awareness Task. Participants came from households where Spanish was one of the languages spoken. Multiple linear regression and path analyses were utilized to reveal the importance of each predictor variable during each grade level. Results indicated that vocabulary, listening comprehension, letter-word recognition, and phonological awareness are the most important predictors throughout the grade levels. These results are discussed in terms of their potential implications for research and practice with ELLs.

## Chapter 1

### Introduction

#### *Statement of the Problem*

The literacy gap in achievement that exists between Caucasian and Hispanic students is significant. This is a severe problem that needs to be addressed because Hispanic students represent one of the fastest growing minority groups enrolled in U.S. schools. Yet, according to current trends about one of every four Hispanic students (27%) is bound to drop out before the completion of high school (National Center for Educational Statistics, 2003). In a 2000-2001 study by the U.S. Department of Education, researchers noted that English language learners (ELLs) comprised a little over one in every 10 elementary school students. Among these students, Spanish constitutes the language spoken by 79.2% of ELL (Kindler, 2002). By the year 2030, this group of students will represent 40% of the school age population, yet the majority of U.S. schools are currently failing at providing them with adequate levels of education (Thomas & Collier, 2002).

With the passage of the No Child Left Behind Act (NCLB) in 2002, schools around the nation are being held accountable for the academic achievement of all students. As a direct result, NCLB ensures that educators are held accountable for the progress of ELLs. By the year 2013, NCLB wants all third grade children reading at grade level. Therefore, educators are in a rush to make sure ELLs are acquiring the level

of academic English necessary for passing the high-stakes tests used in the accountability systems. Additionally, states and school districts are mandated by Title III of the NCLB to develop coherent language policies that delineate how their schools address the needs of ELLs. States should also have standards set up describing the types of skills students should possess in core subject areas such as reading. Standards should be determined by research highlighting skills that ELLs should possess, rather than on monolingual expectations. Regrettably, systematic studies of the early reading acquisition of ELLs are quite limited (Gerber, Jimenez, Leafstedt, Villaruz, Richards, & English, 2004). These standards may be unattainable when one considers the research on bilingual language development (discussion to follow in Chapter 2). Finally, schools are also being required to implement theoretically sound, research-based programs that can provide evidence of student learning and achievement (Freeman, 2004).

It is difficult for ELLs to meet reading benchmarks under a progress-monitoring system such as that proposed by NCLB. By definition, ELLs have had very limited exposure to important pre-requisite reading skills such as phonology, the alphabet and vocabulary in English. That is why this population is increasingly being identified as at-risk for reading failure (Gerber et al., 2004). Freeman (2004) explains that the majority of U.S. schools have a language-as-problem ideological orientation. This ideology views “languages other than English, and speakers of languages other than English, as problems to be overcome” (p. *viii*). Such a deficit orientation is unfortunate because it perpetuates the subordinate status of non-English languages, and contributes to the poor academic performance of speakers of other languages (Freeman, 2004).

The opposite ideology views languages other than English, and speakers of those languages as resources that need to be tapped (Freeman, 2004). This is the philosophy of dual-language programs that build on the linguistic and cultural resources that many students already possess at the start of their schooling. Freeman (2004) argues that when this resource is tapped, ELLs, their families, and the U.S. in general benefit. Even though the research has indicated that effectively implemented dual language immersion programs provide the best long-term results for ELLs (Lindholm-Leary, 2001; Thomas & Collier, 2002), opting to implement such programs is filled with much sociopolitical debate (Freeman, 2004). It may take more longitudinal studies to alter the widespread deficit ideology that exists around the nation. This study strives to provide some further understanding of how bilinguals acquire both English and Spanish under the current language-as-problem ideology. Perhaps such research may serve for future comparative studies with students whose language is viewed as a resource.

### *Theoretical Framework*

Two theoretical frameworks guide this research study. The first is the simple view of reading introduced by Hoover and Gough (1990). These researchers have explained that skilled reading can be considered as consisting of the product of two necessary skills: decoding and listening comprehension. The simple view of reading can be illustrated with the formula  $R = D \times C$ , where R represents reading comprehension, D represents decoding skills, and C represents listening comprehension. Such a formula can be interpreted as meaning that a child lacking decoding or listening comprehension skills results in a non-reader. Students have been found to possess good decoding skills

and at the same time have demonstrated weak reading comprehension abilities as a consequence of their poor language comprehension skills (Stothard & Hulme, 1992).

The simple view of reading lends itself well with this study because the theory's predictive validity was tested with a group of bilingual children in grades 1 through 4. Hoover and Gough (1990) found that about half of the variance in reading comprehension was explained by decoding and listening comprehension. Therefore, these skills can be viewed as essential pre-requisites to becoming a good reader.

The second theoretical framework provides a basis for understanding the factors involved when students are learning a new language. Cummins (1979) introduced the developmental interdependence hypothesis to gain an understanding of how bilingual children learn two languages simultaneously. With this hypothesis, Cummins indicated that the level of second language (L2) competence reached by students is to some extent related to the competence students demonstrate in their L1 (native language) at the start of intensive immersion into an L2 setting. Hence, the higher students in this study achieve in Spanish at pre-school, the higher they should achieve in English at the end of first grade.

### *Purpose of the Study*

This study utilized data from the Early Childhood Study of Language and Literacy Development of Spanish-speaking Children (ECS)<sup>1</sup> that was developed to gain information about the language and literacy development of a young group (age= 4 -7 years) of ELLs. Additional analyses were conducted with the data collected by the initial

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<sup>1</sup> This study is a sub-project (Principal Investigators: Patton O. Tabors & Mariela M. Paez) of a program project titled Acquiring Literacy in English directed by the Center for Applied Linguistics, Washington, DC. The program project is funded by the National Institute for Child Health and Human Development and the Office for Educational Research and Improvement, US Department of Education (Grant No. P01 HD39530). Additional funding was provided through a National Science Foundation Minority Postdoctoral Fellowship to Lisa M. López (award # 0109201).

group of researchers to further explore how language, emergent literacy, and reading skills develop with ELLs.

If monolingual students serve as a comparison for understanding the language development of all children, then bilingual children present differences that need to be analyzed from a perspective that allows for different ways of learning languages (Genesee, Paradis, & Crago, 2004). Valdes and Figueroa (1994) explained that it is unclear how bilinguals may differ from monolinguals and as a result it is unknown how these differences can affect their performance on standardized measures. As a result, this study examined whether reading skill development for bilinguals is parallel to that of monolingual, English-speaking peers or if there are differences that need to be highlighted.

#### *Research Questions*

1. What early language and literacy skills are the most important predictors of the reading abilities of a group of English language learners (ages 4 – 7)?
2. Is there a difference across grade levels in the ability of these early language and literacy skills to predict reading ability on the book task?
3. What are the direct and indirect effects across grade levels of the reading task predictors on the book task?

#### *Significance of the Study*

There exists a gap in understanding how to progress monitor and intervene with ELLs who struggle to read in English and who are often misidentified as having learning disabilities. Researchers are establishing a consensus regarding benchmarks for identifying monolingual students who are non-responsive to instruction, but there is a great deal of uncertainty with respect to the application of such identification and

intervention strategies with ELLs (Gerber et al., 2004). Graves, Gersten and Haager (2004) utilized the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) as an outcome measure with ELLs and they observed that about 20-40% of students in first grade classrooms with top-rated teachers still fell below the 40 words per minute (wpm) benchmark. Such an observation brings to light the possibility that such a benchmark may be too high for first graders not yet fluent in English. These authors stated that research is currently being conducted to address this issue and to determine whether revised benchmarks are indeed necessary (Graves et al., 2004).

The overarching goal of this present study is to examine how well certain language and literacy skills predict a group of ELLs ability to perform on a book reading task. It is hoped that findings from this study can be used to guide future research for establishing standards for ELLs. By gaining a further understanding of their language and literacy skills, perhaps one day standards can be established that are more in line with the ELLs' true abilities. The discussion above regarding NCLB demonstrates that our country's leaders are establishing national goals in order to diminish the gap that exists between minority and majority students (Lindholm, 1991). Therefore, researchers are being encouraged to find answers to the multitude of questions that remain regarding how best to remedy the problems ELLs are facing while learning how to read.

#### *Organization of Remaining Chapters*

The proceeding chapters will highlight the specifics of this study. Included in Chapter 2 is a review of the literature already published that relates to the development of literacy skills for both monolingual and bilingual students. Chapter 3 describes the methodology that was used to conduct the research study including: a description of the

participants, ethical considerations, assessment instruments, procedures, research design and data analysis. Chapter 4 provides the results of the current study. Finally, a summary of findings, implications for research, limitations, implications for practice, and directions for future research are presented in Chapter 5.

## Chapter 2

### Review of the Literature

U.S. schools are structured to prepare its young citizens to contribute to the nation's economic system and perpetuate the beliefs of that system. One of the ways that U.S. schools prepare students for the labor force is by teaching them the skills necessary for employment, such as reading (Ogbu, 1987). Therefore, it follows that economic success in the U.S. can seldom occur without knowing how to read. At a minimum, basic reading skills are necessary across all academic disciplines and are generally required in order to achieve personal, social, and economic growth. Once children learn to read, they are endowed with the ability to become reflective and independent learners (Good, Simmons, & Smith, 1998). D'Angiulli, Siegel and Maggi (2004) explained that a community's potential for success is to a certain extent dependent on the literacy levels of its children. Therefore, the success of countries with a great influx of immigrants, such as the U.S., may depend on English language learners (ELLs) developing adequate reading skills in their second language (D'Angiulli et al., 2004).

#### *Reading Trends in the U.S.*

A report from the National Center for Educational Statistics (NCES) has indicated that as much as 37% of children in the U.S. read below basic proficiency levels. This percentage has been a rather constant figure for over a decade. In addition, 26% of these students will reach the eighth grade, without attaining a level of basic reading proficiency

(NCES, 2004). This translates into no less than 10 million children in the U.S. being poor readers (Fletcher & Lyon, 1998). Unfortunately, based on these findings, the reading ability of today's youth does not look too promising.

The trend described by NCES where the majority of poor readers in fourth grade continue being poor readers in eighth grade has been documented by researchers such as Juel (1988) and Stanovich (1986), the latter of whom refers to the phenomenon as the "Matthew Effect" in reading. Stanovich (1986) makes the comparison to the biblical Matthew effect where the rich get richer and the poor get poorer. Students who possess the riches (e.g., phonological awareness) at the beginning of their schooling experience go on to acquire even more riches (e.g., comprehension). In the meantime, those students who do not initially possess such riches end up unlikely to ever acquire subsequent wealth because of their inadequate exposure to reading.

The trajectory starts very early in life. Stanovich (1986) discussed the importance of acquiring phonological awareness at an early age as a prerequisite for success in reading. Phonological awareness refers to the conscious awareness of the sound structure of language. It includes the ability to detect, manipulate, and think about the various units in spoken language (e.g., syllables and phonemes) separate from meaning (Sindelar et al., 2002). In addition, students who do not gain an understanding of the alphabetic principle early on will tend to become poorer readers and get trapped in a negative spiraling trend. Understanding the alphabetic principle involves knowing that letters and sounds work together to make words. Children must possess skills in both phonological awareness and alphabetic principle (plus certain basic print concepts) before they can decode words. Weak decoding skills restrict the amount of text students get exposed to.

Then the lack of practice with current reading materials leaves students unprepared to tackle more difficult curriculum as the school year progresses (Stanovich, 1986). Finally, students perceive their efforts as worthless when faced with a curriculum that is too advanced and do not benefit from the rewarding experiences that reading may offer.

In contrast, Stanovich (1986) reported that students who break the alphabetic code early get exposed to a much greater amount of text (about three times as many words as poor readers). Such practice in reading is likely to result in a growth in vocabulary. In the end, these early decoders gain general knowledge and a greater understanding of complex syntactic structures through their continued exposure to print (Stanovich, 1986). Although the Matthew effect can be observed with any group of students, a prime example exists between Hispanic and Caucasian students. When compared to Caucasian age-mates, a greater proportion of Hispanic students are falling behind on reading achievement from an early age. Plus, when the reading achievement of Hispanic adults was recently assessed, the gap in reading achievement had grown (NCES, 2003; NAAL, 2003). Therefore, ELLs are starting out with weaker literacy skills and that gap only continues to increase with time.

In the previous chapter, references were made alluding to the severity of the problem that educators face in helping ELLs to acquire adequate reading skills. Therefore, for the remainder of this chapter, research will be reviewed highlighting the following: the reading trends of the Hispanic population, importance of early identification of reading difficulties, early literacy skills, and oral language skills. A focus will be maintained on studies conducted with bilingual Hispanic children. Yet, the research conducted with monolinguals will be discussed when appropriate because the

greatest amount of research on reading development has been conducted with this population. There will also be some interspersed discussion of whether or not these early language and literacy skills have been shown to transfer across English and Spanish.

*Reading trends of the Hispanic population.* Students who live in U.S. households where languages other than English are spoken represent approximately 9.9 million of 45 million school-aged children. Such demographics denote a 35% increase in this population since 1980. Of the 9.9 million students, about two-thirds (six million) are children whose home language is Spanish (Lindholm-Leary, 2001). Hispanics represent the fastest growing minority group in the U.S. (U.S. Census Bureau, 2000). Unfortunately, Hispanics also represent the poorest and least educated group in the nation (Lopez & Cole, 1999).

One of the primary academic areas that Hispanic students are struggling with is reading. Overall, Spanish-speaking students represent the lowest-achieving cultural group in the U.S. when it comes to reading achievement. It is difficult to interpret the performance of ELLs on English-reading tasks because of their limited exposure and proficiency in English (Gerber et al., 2004). This results in disproportionately high levels of special education referrals and climbing rates of learning disabled labels (Gunn, Smolkowski, Biglan, & Black, 2002). Findings from the 24<sup>th</sup> *Annual Report to Congress on IDEA* indicate that over 17% of students identified as learning disabled are Hispanic yet they only represent about 12-13% of the population (Office of Special Education Programs, 2002).

In addition, researchers have pointed out that an under-identification problem may also exist with English language learners (ELLs) if educators erroneously attribute early

learning difficulties to delays in learning English (Gerber & Durgunoglu, 2004; Geva, 2000). Out of fear of inaccurately attaching a disability to a student who just needs time to learn the language, educators may be refraining from seeking supports for struggling ELLs. Very little information is available regarding the prevalence of learning disabilities among ELLs, especially reading disabilities (Gerber & Durgunoglu, 2004). Therefore, the reading development of ELLs needs to be studied in order to design assessments that can differentiate children at risk for reading disabilities from those at risk in acquiring their second language (Gerber et al., 2004).

#### *Importance of Early Identification of Reading Difficulties*

As reported above, learning to read can become quite a difficult feat for a great number of children, and mainly depends on developing language and literacy skills at an early age (Fletcher & Lyon, 1998). Research on reading in the 1990's focused on identifying prerequisite reading skills in attempts to decrease the number of students experiencing difficulty learning to read. Pre-requisite skills for decoding have been identified to include phonological awareness, print awareness, and the alphabetic principle (Sindelar et al., 2002). It is crucial to identify reading problems by assessing prerequisite skills because, as Juel (1998) reported, by the end of first grade, students with good reading skills see about 18,681 words in text. Yet, poor readers only see about half that many words, 9,975. As exemplified with the Matthew effect, as early as first grade it is already difficult for poor readers to catch up to their peers.

Good et al. (1998) illustrated that to reach their peers, poor readers need to increase their progress by a rate of 3.5 standard deviations and acquire skills twice as fast as their peers. Such progress is quite a difficult feat for initially poor readers to

overcome. In essence, early identification and intervention are crucial because the longer it takes to identify a child with basic reading difficulties, the more difficult it becomes to provide successful remediation (Lyon, 1996). Shaywitz, Fletcher, and Shaywitz (1994) reported that 74% of students with a reading disability who do not receive intervention before the age of nine will continue exhibiting a reading disability throughout high school. These findings suggest that a critical period for intervening exists. Ideally, schools should strive to conduct diagnostic assessments in preschool (Dufva, Niemi, & Voeten, 2001).

Although a number of studies with monolingual children have highlighted how critical early language and literacy skills are for later success in reading, only a handful have been conducted with bilingual students (Whitehurst & Lonigan, 1998).

Longitudinal studies analyzing the development of English-reading skills of ELLs had not been documented until fairly recently (e.g. Lindsey, Manis, & Bailey, 2003; Lesaux & Siegel, 2003; Swanson, Gerber, & Leafstedt, 2004). What follows is a brief description of a study with such a research goal.

This study utilized data collected by The Early Childhood Study of Language and Literacy Development of Spanish-speaking Children (ECS) (Tabors, Paez, & Lopez, 2003); preliminary findings from this study will be discussed throughout this chapter. The ECS was developed to answer a number of questions relating to a group of English language learners (Paez et al., 2007). Children were assessed in English and Spanish from pre-kindergarten to second grade in order to identify factors related to their language and literacy development in each language. The main goal with this group of

students was to see if language and literacy development differed from that of monolinguals (Paez et al., 2007).

The principal investigators pointed out two groups of literacy-related skills, emphasized through research with monolinguals (e.g., Dickinson & Snow, 1987; Lonigan, 2003; Storch & Whitehurst, 2002), that are important prerequisites of reading during the preschool years. The first group of skills are referred to as early literacy skills and include phonological awareness, letter and word recognition, and writing and spelling skills. The other group consists of oral language abilities and includes vocabulary and listening comprehension skills (Tabors et al., 2003).

#### *Early Literacy Skills*

*Phonological awareness.* There has been surmounting evidence relating students' phonological awareness skills with reading achievement in English (e.g., Adams, 1990; Swan & Goswami, 1997). Good et al. (1998) stressed that so much empirical support (e.g. Stanovich, 1986; Torgesen & Hecht, 1996) has been found pointing to poor readers as having phonological deficits that "it has been deemed a core deficit" (p. 46). Development of good phonological awareness skills depends on explicit reading and spelling instruction. Therefore, children do not naturally gain phonological awareness unless they are exposed to print (Goswami, 2001).

According to Lyon (1996), most children easily acquire phonological awareness by six or seven years of age. Yet, about 17% of children experience significant difficulties picking up these skills and struggle learning to read (Lyon, 1996). Unless phonological awareness is acquired, such children will continue to struggle with reading, regardless of their intellectual capabilities (Lyon, 1996). Morris, Bloodgood, Lomax, and

Perney (2003) explain that children will be unable to make use of the alphabetic code and match the letters in words with their corresponding sounds until they can segment spoken words into phonemes.

*Cross language transfer of phonological awareness.* Durgunoglu, Nagy and Hancin-Bhatt (1993) noted that Spanish phonological awareness also predicts students' word recognition skills in Spanish. Durgunoglu and colleagues set out to study whether phonological awareness skills transferred across English to Spanish and their findings pointed out that they did indeed transfer. It was observed that Spanish phonological awareness was related to students' ability to recognize words in English. If students scored high on measures of phonological awareness in Spanish, they were also more successful at reading English words and pseudowords. When bilingual students from the ECS sample were assessed during the end of pre-kindergarten, they achieved higher scores in the Phonological Awareness Task in Spanish than in English (Paez et al., 2007).

Phonological awareness is a metalinguistic ability, and is not language specific (Durgunoglu et al., 1993). In alphabetic languages, students are required to “identify the phonological subcomponents of the spoken words and understand how orthographic symbols are mapped onto those phonological subcomponents” (p. 462). Regardless of the alphabetic language in which students develop these metalinguistic skills, they utilize them when attempting to read in a new language.

Durgunoglu (1998) later studied the word recognition and spelling performance of Spanish-speaking students. Results indicated that Spanish word recognition and spelling are best predicted by the students' degree of phonological awareness and letter knowledge in Spanish. Confirming Durgunoglu's previous findings, evidence was also

found to support the ability of Spanish proficiencies such as phonological awareness, word recognition and spelling to predict performance in English word recognition. Although Durgunoglu's sample did not receive formal reading and writing instruction in English, these students were able to read environmental print and spell words in English as a result of developing such skills in Spanish. Phonological awareness has been observed to transfer across languages as early as preschool (Dickinson, McCabe, Clark-Chiarelli, & Wolf, 2004; Lopez & Greenfield, 2004).

Since a number of studies have provided evidence for the cross language transfer of phonological awareness (e.g., Cisero & Royer, 1995; Comeau, Cormier, Grandmaison, & Lacroix, 1999; Durgunoglu et al., 1993; Lindsey et al., 2003; Riccio, Amado, Jimenez, Hascrouck, Imhoff, & Denton, 2001), it was suggested by Durgunoglu (2002) that educators may assess students' L2 phonological awareness skills as long as they have received sufficient instruction in L1. Riccio et al. (2001) pointed out that Spanish measures of phonological processing may be essential for early identification of students at risk of developing reading problems in English and Spanish. These authors emphasized that identification in early grades (e.g., kindergarten, first grade) may result in proactive programming that may prevent the development of reading problems. Such assessments can take place even if ELLs have not developed an extensive vocabulary in their L2. This recommendation is made because phonological awareness transfers even though vocabulary does not (Durgunoglu, 2002). Phonological awareness was measured as early as age 4 with the ECS, pre-kindergarten sample. Although they displayed stronger skills in English than in Spanish for all the skills assessed, they performed better in Spanish on the phonological awareness measure (Paez et al., 2007).

*Letter and word recognition.* Letter knowledge is an emergent literacy skill and one of the best predictors of later reading achievement. The term letter recognition refers to a child's knowledge of the letters of the alphabet. A child who enters school knowing the alphabet is likely to experience success with reading in the future (Pullen & Justice, 2003; Whitehurst & Lonigan, 1998).

When students have poor phonological awareness they cannot decode (recognize words) at a fast rate and words are often read inaccurately (Lyon & Chhabra, 1996). Of all the children in public schools identified as learning disabled, about 70-80% of the students' primary area of impairment is in reading. Of those students with reading impairments, 90% of them have problems with word recognition. Children with good word recognition skills realize "that words have an internal structure based on their sounds and represented by the alphabet" (Fletcher & Lyon, 1998, p. 58). Children with deficient word recognition skills are unable to segment syllables and words into their smallest sound units, phonemes (Lyon, 1996).

In order to determine the types of skills that students possess in kindergarten that might predict their reading skills in second grade, Baker, Fernandez-Fein, Scher and Williams (1998) studied a couple of prerequisite skills. They found that knowledge of nursery rhymes in kindergarten best predicted word attack (36% of the variance) and word identification skills (48% of the variance). The predictor that made the second strongest contribution was letter knowledge. An extra 11% and 18% of the variance for word attack and word identification, respectively, was explained by letter knowledge (Baker et al., 1998). Quintessentially, the best way one can observe whether a child has a

reading problem is to assess his or her ability to read single words from a list or text (Lyon & Chhabra, 1996).

Certain educators have expressed concern about bilingual children mixing their languages and not being able to differentiate the structure and rules of each (Durgunoglu, 2002). This occurs because negative transfer is oftentimes witnessed in word recognition and spelling. Durgunoglu et al. (2002) examined a number of circumstances where bilingual students inappropriately used their Spanish skills to spell in English and vice versa. One of the reasons why such a phenomenon occurs is because Spanish orthography has a more transparent sound to spelling correspondence. To a greater degree, words in Spanish are written the way that they are heard. Therefore, Spanish-speakers tend to make the mistake of thinking that English words are spelled as transparently as they are in Spanish. An example of when English is mixed into Spanish is observed when English consonant clusters are used to spell in Spanish (Durgunoglu et al., 2002).

Such orthographic transparency may actually be beneficial to ELLs. An argument was made by Koda (1997) that orthographic knowledge in L1 has the potential to assist in word recognition and lexical processing in L2. The amount of transfer depends on how orthographically similar both languages are. English and Spanish are quite orthographically similar and with the transparent nature of Spanish orthography, it may actually be easier for a Spanish speaking student to learn (Geva & Wang, 2001).

When word recognition and spelling performance were assessed by Durgunoglu (2002) at more comprehensive levels, positive correlations were still detected both within and between languages. Paez and Rinaldi (2006) investigated whether transfer of word

recognition skills from Spanish to English was replicable with the ECS sample. They indeed found that Spanish word recognition skills in kindergarten predicted English word recognition skills in first grade. Therefore, educators should be advised to look at the broader picture when they witness the errors bilingual students make while decoding words and spelling. In general, students are transferring their decoding and spelling skills from one language to the other (Durgunoglu, 2002). The couple of instances where incorrect transfer occurs should be considered similar to the invented spelling of monolinguals. With enough practice and exposure to English and Spanish, bilingual students should eventually acquire the correct decoding and spelling abilities in each language. Paez et al. (2007) hypothesized that students would demonstrate significant improvements in early English literacy skills and such gains were not observed. In addition, they fell even further behind the Spanish norm with Letter-Word Identification.

*Awareness of print.* Pullen and Justice (2003) explain that “a child’s awareness of the forms, functions and uses of print provide the foundation upon which reading and writing abilities are built” (p. 89). Children who are read to often are aware that book language differs from spoken language (Clay, 1991).

Print knowledge was described by Manis, Lindsey and Bailey (2004) as a composite variable resulting from combining two measures that assessed letter naming skills and concepts about print. Students were asked to provide the researchers with letter names and sounds in both English and Spanish. To assess concepts about print, the investigators utilized children’s books in Spanish to ask questions evaluating their understanding of book and print conventions. The assessment paralleled the English version of Clay’s (1979) Concepts About Print task. Manis et al. (2004) analyzed four variables (print

knowledge, phonological awareness, rapid automatic naming (RAN) and expressive language), which all resulted as significant predictors from Spanish to English. Print knowledge turned out to be the single best predictor across languages. According to these findings, quantity of early exposure to print in Spanish best predicts future reading skills in English (Manis et al., 2004).

The assessment of Concepts About Print (1979) has been described as a good tool for non-readers because educators can determine whether the skills that precede word reading are present. These skills should develop during the first two years of schooling and educators should witness an increase in these skills as reading improves. Test-retest reliability reported by Clay for a group of urban children was .95 (Clay, 1970). The validity of Concepts About Print was also investigated by analyzing the measures' correlation with word reading abilities of 100 six year old children. A correlation of .79 was found (Clay, 1966). A group of 56 kindergarteners were also assessed and test-retest reliability coefficients of .73 to .89 were obtained. Corrected split-half coefficients with the same group of children were reported between .84 and .88 (Day & Day, 1980).

*Writing and spelling skills.* In order to be successful with spelling, a child needs to have good phonological awareness skills and knowledge of the alphabetic principle. MacDonald and Cornwall (1995) pointed out that the best predictor of spelling 11 years after kindergarten is phonological awareness. Their longitudinal study indicated that phonological awareness was a stronger predictor of a students' ability to spell than vocabulary development, word recognition and spelling achievement. These results were obtained from a sample of 58 White monolingual students from Nova Scotia.

Students from the ECS sample, assessed during the end of pre-kindergarten, did not show substantial improvements in their spelling or writing skills. Even though these students did not demonstrate expected gains, they scored better on early literacy measures than they did on oral language measures in both English and Spanish. Nevertheless, their early literacy skills fell below the means of their monolingual peers (Paez et al., 2007).

*Writing conventions.* Having an understanding of writing conventions requires more advanced skills than the previously mentioned language and literacy skills, but such skills are still found to transfer across languages. These skills can be assessed by providing students with pictures and asking them to write a story describing what is happening in the picture. A different picture can be used for each language being assessed.

Durgunoglu (2002) explained that students' awareness of writing conventions was similar between languages. If students knew how to formulate detailed and well-organized plots that included character descriptions, a conflict, a climax and an ending, they demonstrated this knowledge across languages (Durgunoglu, 2002).

Through analyses of students' writing assignments, Zecker (2004) observed spontaneous cross language use with students enrolled in a dual-language program. The students were either English dominant or Spanish dominant. Yet, they incorporated words from their non-dominant language as early as six weeks after they began school. This is an interesting finding because students were not asked or required to write in their non-dominant language so early in their bilingual instruction. Zecker (2004) provided examples of how children applied their developing understanding about writing towards writing in their second language. When students were finally required to write in their non-dominant language, they did not go back to more elementary forms of writing.

Instead, they applied their already established knowledge of writing in biliterate ways (Zecker, 2004).

### *Oral Language Skills*

Research conducted with monolingual students has indicated that oral language is highly correlated with achievement in reading comprehension (Biemiller, 2003). The oral language abilities of preschool children were evaluated by Catts, Fey, Zhang and Tomblin (1999) in order to analyze their relationship with reading disabilities in second grade. Their findings revealed that over 70% of the weak readers studied exhibited language deficits in kindergarten. These deficits were primarily related to difficulties with phonological processing and oral language (Catts et al., 1999).

Having adequate oral language skills in English is also crucial for ELLs as they learn to read in English (Carlisle, Beeman, Davis, & Spharim, 1999; Proctor, Carlo, August, & Snow, 2005). Lindholm (1991) summed up the findings between oral language skills and reading as follows: reading and academic language skills are highly dependent, oral English proficiency and academic English proficiency are not correlated, and both types of language proficiency are correlated with students' ability to read in English. Such findings have significant implications for working with ELLs because both types of language skills, academic and conversational, should be developed in each language before educators can observe high levels of reading achievement (Lindholm, 1991). With proper instruction, it takes about five to seven years for ELLs to be able to achieve grade level norms (Thomas & Collier, 2002).

*Vocabulary.* To decrease the number of ELLs being misidentified for special education services, it is vital to evaluate the validity and reliability of vocabulary scores. Durgunolu et al. (1993) are some of many researchers (e.g., Cobo-Lewis, Eilers, Pearson, & Umbel, 2002; Manis et al., 2004) who have emphasized that oral language proficiency measures in Spanish are not reliable for predicting students' reading abilities in English. The single greatest indicator of oral language proficiency is vocabulary. Vocabulary knowledge is vital to comprehending both spoken and written language (Proctor et al., 2005). No significant correlations were found between oral proficiency levels and word recognition or phonological awareness skills (Durgunoglu et al., 1993).

A within language relationship was found by Lopez and Greenfield (2004) between language proficiency and phonological awareness, but not across languages. Their findings also confirm that oral language proficiency has not been observed to transfer across English and Spanish. Nevertheless, oral proficiency is necessary for phonological awareness to transfer. Therefore, if students are evaluated based solely on oral proficiency and they perform well, they may be denied the supportive services needed to enhance their poor reading abilities. Such findings also draw attention to the fact that vocabulary needs to be taught in each language.

When ELLs' vocabulary development occurs at a slow rate, their ability to comprehend text is affected, and their chances of being misdiagnosed with a learning disability increases (August, Carlo, Dressler, & Snow, 2005). The findings of Umbel, Pearson, Fernandez and Oller (1992), revealed that students who came from bilingual homes scored significantly below the norming sample in English vocabulary despite the fact that the SES of the ELLs was higher than the norming sample. Struggling Hispanic

readers were assessed and demonstrated that L2 vocabulary and phonological awareness each independently contributed to reading comprehension in L2 (Carlisle et al., 1999).

The opposite was seen when word reading abilities were assessed and the effects of SES and literacy instruction were controlled (D'Angiulli et al., 2004). By Grades 3 or 5, English language learners on the lower and higher end of the SES spectrum were observed to have better word reading abilities than their L1 comparison group. Such a finding may be the result of the intensive literacy program that was in place for the intervention students, and not simply SES. In addition, the students in this study may have been able to read the words, but not have understood what the words meant.

Some precautions need to be taken when interpreting the results of D'Angiulli et al. (2004) because their sample of ELLs consisted of students in North Vancouver rather than Hispanic students in the U.S. A longitudinal study similar to that of D'Angiulli et al. (2004) that controls for SES and instruction would be ideal for investigating the potential growth in vocabulary of Hispanic ELLs. Adding a measure of vocabulary can inform educators whether certain literacy instructional programs also help to diminish the gap that exists in word knowledge between Caucasian and Hispanic students.

When no intervention is in place to adequately teach vocabulary, the gap has been observed to get wider through the years. As the school year progressed, pre-kindergarten students from the ECS sample were observed to lose ground in Spanish vocabulary. Overall, their oral language skills in Spanish fell well below norms. As early as pre-kindergarten the pattern of Hispanic students losing skills in Spanish in exchange for acquiring the English needed for school success was evident (Paez et al., 2007).

*Listening comprehension (language recall).* A bidirectional relationship has been observed between reading and listening comprehension. Generally, high levels of listening comprehension correlate with high levels of reading comprehension and vice versa. It has been observed that such correlations are not as strong early on but become stronger once word recognition becomes automatic (Curtis, 1980; Palmer, McCleod, Hunt, & Davidson, 1985). Nevertheless, some students may exhibit poor comprehension despite having well developed word recognition skills. Such a phenomenon can be attributed to general language comprehension skills deficits (Stothard & Hulme, 1992).

In a study conducted by Duvfa et al. (2001), reading comprehension was assessed and observed to be more highly correlated with listening comprehension than word recognition in a group of Finnish students. Two hundred twenty-two students were followed from preschool through second grade in one of the most extensive analyses of phonological memory and reading. The variables studied included verbal abilities, phonological memory, phonological awareness, word recognition, listening and reading comprehension. The authors concluded that phonological memory was a weak predictor of word recognition and reading comprehension if phonological awareness and listening comprehension were utilized in their structural equation model. High stability was observed when the development of comprehension skills were examined from preschool (listening comprehension) to second grade (reading comprehension). They therefore concluded that the two most reliable skills for predicting word recognition and reading comprehension were phonological awareness and listening comprehension (Duvfa et al., 2001).

Garcia (1991) administered expository text passages to a group of fifth and sixth grade Hispanic students. The children were provided with the passages in order to follow along with the examiner. Nevertheless, the examiner read the passage out loud to make the assessment a measure of comprehension and not solely a measure of students' ability to read in English. Results indicated that the ELLs studied were able to produce longer and more accurate recalls of the English text when they were allowed to use their first language. Garcia (1991) claimed that such findings were in-line with previous research conducted with ELLs. Langer, Bartolome, Vasquez and Lucas (1990) found that students' ability to comprehend text in English and Spanish depended on how well their meaning making strategies were developed in either language. The only thing required of students was basic proficiency in English to be able to comprehend text, once they demonstrated that such strategies were being used. Students who had good meaning making strategies in Spanish were observed to transfer such skills when reading in English and vice versa (Langer et al., 1990).

Another interesting finding was that these aforementioned reading comprehension strategies distinguished good readers from poor readers, not their level of English fluency. Yet, the degree of competence in Spanish was related to the students' enhanced ability to make meaning of text in both languages. Students claimed that they thought of words and concepts in Spanish while reading in English, especially when they experienced difficulties with the text. In general, students more successfully recalled content, generated hypotheses, and provided elaborate recalls while reading in Spanish. The students were also better able to respond to decontextualized questions when such

questions were asked in Spanish and they were allowed to respond in Spanish (Langer et al., 1990).

Garcia's (1991) findings were discrepant with those of Paez et al. (2007) because the latter group indicated that as early as pre-kindergarten ELLs' language recall skills were superior in English. These differences may be a result of the instructional programs the bilingual students were enrolled in during their early elementary years. Garcia (1991) reported that only the students who stated being literate in both English and Spanish were included in their study. Only a few of those students had been enrolled in bilingual programs and transitioned into English-only classrooms in second or third grade. Nevertheless, the exact percentage of bilingual program enrollment was not reported. In addition, no assessments were conducted in Spanish to verify the validity of the student claims. It is also possible that the students who reported being literate in both languages may have received instruction in their country of origin. Too many variables were left uncontrolled in Garcia's (1991) study. In spite of that, the discrepancies observed may have resulted because the students received reading instruction in their first language, as opposed to those studied by Paez et al. (2007).

Paez et al. (2007) obtained results similar to previous research indicating that the oral language skills of bilinguals are quite limited. Therefore, both essential components of reading comprehension, word recognition and listening comprehension skills, should be measured in order to obtain a more accurate assessment of students true reading abilities.

### *Conclusions*

School psychologists sensitive to linguistic and cultural differences of Latino families may be instrumental in optimizing the educational attainments of ELLs. Their awareness of data-based instructional practices in early language and literacy can be beneficial when collaborating with parents and teachers of ELLs. This knowledge is especially valuable in states or school districts that only provide instruction in English for bilingual children (Quiroga et al., 2002). The study was conducted in hopes of adding some understanding to the field. The findings may add to the existing knowledge base available for making data-based instructional decisions.

## Chapter 3

### Methods

#### *Participants*

The participants in the Early Childhood Study (ECS) were recruited by contacting the parents of children in Head Start and public preschool programs in three communities in Massachusetts (Boston, Framingham, and Lawrence), and one community in Maryland (Montgomery County). All of the children were 4 years old at the beginning of pre-kindergarten and were age-qualified to attend kindergarten the following year. Additionally, the children in the sample in Massachusetts and Maryland were living in homes where Spanish was at least one of the languages spoken.

The ECS sample was made up of 267 (50% female, 50% male) children who were assessed at three different times. The first assessments occurred in the spring of 2002 as the students exited their pre-kindergarten programs (Time 1). Follow-up assessments occurred as students completed kindergarten (Time 2) and their first (Time 3) grade year. The mean age for the ECS sample at Time 1 was 4.46 years, at Time 2 the students were 5.41 years old, and at Time 3 they were 6.38 years old.

The majority of the study participants were born in the United States (80.2%) and 4.5% were born in the U.S. territory of Puerto Rico. The remaining percentages consisted of children born in various countries in Latin America. Although most of the children in this sample were born in the U.S., their parents came from 22 countries in

Latin America and the Caribbean, including the U.S. territory of Puerto Rico. Twenty-three percent of the sample did not have a father or male figure present in the home.

Paez et al. (2007) described the children in the ECS sample as being dual language learners. Therefore, they have either learned both English and Spanish from infancy or are learning English as a second language once enrolled in their pre-kindergarten programs. Since the findings of Hammer, Miccio and Wagstaff (2003) indicated that these two groups of young children showed similar early literacy skills, they were “considered as one group with diverse dual language abilities based on their personal histories” (Paez et al., 2007).

The sample of children represent a variety of family backgrounds in regards to language use at home, parental years of education, and family income. Sixty-three percent of the mothers interviewed reported using only Spanish at home and an additional 20% spoke mostly Spanish. Thus, for 83% of the families, Spanish was the language mainly used to communicate at home. Of the remaining families, 12.5% claimed to use both Spanish and English at home, and only 5% of mothers claimed to speak mostly in English to their children.

Levels of parental education ranged from 0 to 22 years. A third of the sample of mothers reported having some higher education. Close to a third of the fathers also reported having some higher education. Overall, there did not seem to be great discrepancies between the educational levels of mothers and fathers in the sample.

As for family income, 79.2% of the families in the sample reported making less than \$30,000 with 18.4% making less than \$10,000. Of the remaining families, only 11% had a household income of more than \$40,000. These numbers are expected, considering

that the majority of the students in the study attended Head Start programs, which primarily serve low-income families. For more details on the participants' demographical information, see Table 1 below.

Table 1

Demographical Information of Participants

<i>Language use at home (n = 269)</i>		% of students	
Language			
Spanish only		63%	
Mostly Spanish		20%	
Spanish and English equally		12.5%	
Mostly English		5%	
<i>Level of parental education</i>			
Years of education		Mother	Father
8 or less		20%	27%
12		26%	19%
13 + (higher education)		33%	30%
<i>Family Income</i>			
Income		% of families	
Less than \$10,000		18.4%	
\$10,000 – \$19,999		31.4%	
\$20,000 - \$29,999		29.4%	
\$30,000 - \$39,999		9.8%	
\$40,000 - \$49,999		4.3%	
\$50,000 - \$59,999		2.7%	
\$60,000 - \$69,999		2.4%	
\$70,000 - \$79,999		.4%	
\$80,000 or more		1.2%	

The bilingual children in the ECS sample attended 68 pre-kindergarten classrooms, 58 of which were Head Start classrooms, and the remainder were preschool programs in public schools. English was the dominant classroom language for all except

one all Spanish classroom; however, 21 classrooms experienced varying levels of language use in Spanish. A greater degree of specification regarding the amount of instruction that took place in Spanish was not available to the researcher.

### *Ethical Considerations*

The researchers of the ECS, following ethical guidelines, sought permission from their Institutional Review Board (IRB) to conduct the assessments being utilized for this study. Nevertheless, the current researcher also sought permission from the University of South Florida's (USF) IRB in order to ensure that no analyses were conducted with the data unless they also met USF's ethical guidelines. No analyses were conducted until the study was approved by the IRB committee.

### *Measures*

The language and literacy battery used in this study was based on previous work on the language and literacy skills of young children (Dickinson & Tabors, 2001; Snow, Tabors, Nicholson, & Kurland, 1995), while taking into consideration three further criteria: (a) a need to have tasks in both Spanish and English, (b) the need to have as many instruments as possible that are of high reliability and validity, and (c) the need to have tasks that are appropriate for the age range (ages 4 to 7 years) under consideration. The complete battery has been designed to provide data about a group of constructs that have been shown to be related to children's later literacy achievement (Dickinson & Tabors, 2001).

*The phonological awareness task* (Lopez, Tabors, & Paez, 2002). The Phonological Awareness Task was developed by the research team specifically for the ECS since equivalent tests in Spanish and English were not available that were

appropriate across the needed age range. There are five subtests: rhyme recognition, rhyme production, initial phoneme recognition, sentence segmenting, and syllable segmenting. There are two versions of the test, one in Spanish and one in English. These two versions tap the same skills, but have been constructed separately to demonstrate the children's phonological abilities in each of their languages. A full description of this task can be found in Tabors et al. (2003).

Adequate test-retest reliability was reported for both the English (.68) and Spanish (.59) versions of the test. Internal consistency for the English assessment was reported as moderately high ( $r = .81$  and  $.86$ ). For the Spanish assessments, a moderate consistency ( $r = .78$  and  $.79$ ) was found (for more information see Tabors et al., 2003). Such internal reliability in both languages allows the researcher to proceed with the statistical analysis of this measure using mean scores.

*The woodcock language proficiency battery - revised (WLPB-R)* (Woodcock, 1991). The Woodcock Language Proficiency Battery - Revised is a standardized assessment consisting of a set of subtests used to measure different aspects of language and literacy skills. There are two versions of these tests, one in Spanish and one in English.

Standard scores for all of the WLPB-R subtests are normed with a mean of 100 and a standard deviation of 15. The English Form of the subtests was normed on a randomly selected population of 6,359 English-speaking individuals in the United States. The sample was stratified and weighted so that the population is representative of the distribution and characteristics of the US population. Consequently, the norms for these assessments were developed from monolingual English-speaking children.

The Woodcock Language Proficiency Battery-Revised - Spanish Form (Woodcock & Muñoz-Sandoval, 1995) is parallel in content and structure to the English Form. The Spanish Form of the subtests was normed on 3,911 native Spanish-speaking subjects from both inside and outside the United States. Of these participants, 116 were tested in Costa Rica, 1,512 in Mexico, 196 in Peru, 634 in Puerto Rico, 128 in Spain, and 1,325 in the United States. Although some of the participants used to provide norming data for these assessments lived in the US, these children were, by design, monolingual Spanish speakers (Woodcock & Muñoz, 1995). Consequently, the norms for these assessments were essentially developed from monolingual Spanish-speaking children. The reliability and validity characteristics of both forms of the WLPB-R meet basic technical requirements (see Woodcock, 1991b, p. 124).

The four subtests being used in this study from the WLPB-R include Letter-Word Identification (Identificación de Letras y Palabras), Dictation (Dictado), Picture Vocabulary (Vocabulario Sobre Dibujos), and Memory for Sentences (Memoria para Frases). The Letter-Word Identification subtest first measures symbolic learning through the use of rebuses (the use of a pictogram to represent a syllabic sound), followed by identification of letters and then word decoding. This test is being used in the present study to index children's letter and word recognition abilities. The first items in the Dictation subtest measure children's prewriting skills, followed by items measuring their knowledge of letterforms, spelling, punctuation, capitalization, and word usage. This test is being used in the present study to index children's writing and spelling skills.

In the Picture Vocabulary subtest children are asked to select pictures to match words and to say a word when shown a picture. Although a child's receptive vocabulary

skills are measured at the beginning of this test, this is primarily an expressive vocabulary task. This test is being used in the present study to index children's vocabulary. In Memory for Sentences children are asked to repeat words, phrases, and then whole sentences. This subtest requires the use of both short-term memory and ability to extract meaning from the sentences in order to aid recall. This test is being used in the present study to index children's listening comprehension/ language recalling skills.

*Book task.* The book task is a measure similar to that of Clay's Concepts About Print (1979) task (see Appendix A & B – for a copy of the measures). The assessment is divided into four sections and utilizes the children's book *Carrot Seed* by Ruth Krauss (1989). If a student accurately completes a section of the book task, the examiner continues administration with the next section. Otherwise, the measure is discontinued if the child scores below the established criterion. Sample questions in the first section of the book task involve asking a child to point to the front of the book and later to open the book for the examiner. If the child successfully completes these basic book tasks, then section two is administered.

In the second section, the examiner reads the book to the child and asks questions regarding the events in the story. The child is also asked to point to certain characters in the story. Again, if a sufficient number of questions are answered correctly then the examiner proceeds to the third section. Here the examiner hands the child the book and asks the child to tell the examiner the story. If the child attempts to decode text, the examiner prompts the child to first just describe what the story is about, because they will read it later. Finally, if the child is able to retell the story at least partially, then the

examiner proceeds to the fifth section. At this point, the child is asked to read the story to the examiner.

The same procedures are followed with the Spanish version of the book, *La Semilla De Zanahoria* (Palacios, 1996) (see Appendix B). Each of the versions contained 16 items and students could obtain a maximum score of 24 points. For most of the questions, the child is able to obtain two points for answering correctly and half the credit (1 point) for partially correct responses. Plus, if the child is able to read the book in its entirety, 3 points are awarded in the third section of the task. Children are not allowed to code switch. Therefore, if students answer correctly in English while being assessed in Spanish, the response is scored as incorrect and vice versa (see Appendix C & D- for scoring). Students were reminded to only respond in the language of the assessment throughout the sessions.

#### *Procedure*

Assessment sessions were conducted one-on-one at the school sites and lasted approximately 45 minutes. During the assessment session, children were allowed to discontinue the testing situation at any time. Children were assessed twice, once in English and once in Spanish, at three time points: in the spring of 2002 (Time 1) as they exited their preschool programs, in the spring of 2003 as they completed kindergarten (Time 2), and in the spring of 2004 as they completed first grade (Time 3).

For the ECS sample, there were two teams of assessors, one for each language. The assessors received extensive training on administering the assessment battery. Prior to assessing a child, the assessor spent some time in the classroom getting to know the child. Assessors spoke only in the language of the assessment during both the warm-up

sessions in the classroom and the assessment sessions. These procedures - having separate language teams and using only the language of the assessment - were used to minimize code-switching during testing sessions.

*Data Analysis.* Some descriptive statistics were calculated as preliminary analyses to this study. For example, the means and standard deviations for each of the measures are reported for each grade level. Data analyses follow the same procedures for the Spanish measures. Therefore, analyses of the English and Spanish measures were conducted separately for each language.

The main focus of this study was to determine which early literacy and oral language skills are most important for predicting students' reading abilities (as indexed by the book task). A simultaneous multiple linear regression was used to calculate  $R^2$  which is often used as a measure that quantifies model fit.  $R^2$  may also be interpreted as the proportion of the variance in  $Y$  that can be accounted for by  $p$  predictors. A simultaneous multiple regression was chosen because there was an interest in exploring the importance of all the predictor variables across grade levels.

The researcher proceeded by checking whether the assumptions of the linear regression model were met. Normality of the variables were examined through the use of a standardized residual plot and calculation of skewness and kurtosis. The presence of outliers or influential data points were evaluated to investigate whether any values affected either the regression equation or a single predictor (Stevens, 2002). Cook's distance was used to find influential data points.

The intercorrelations between the predictor variables were also examined. Ideally, the researcher was looking for each of the predictors (early language and literacy

variables) to be highly correlated with the dependent variable (book task) and for low correlations between each of the predictors. Collinearity was explored through the calculation of tolerance statistics and variance inflation factors (VIF).

There was an interest in comparing the contributions made by the individual early language and literacy variables to determine which ones are of greatest importance for ELLs while reading. To determine the importance of the predictors, standardized beta weights were examined. In a study by Baltes, Parker, Young, Huff, and Altmann (2004) the investigators did not find other importance indices to be superior than traditional standardized beta weights. This multiple regression procedure was first conducted with the maximum number of participants in each language. Then the same procedure was completed with the participants who had data in both languages. Obtaining models between languages with an equal number of participants allowed for comparison across English and Spanish.

Finally, a path analysis was conducted in each language to answer the third research question. This statistical procedure allowed the researcher to investigate both the direct and indirect effects of the variables for predicting word reading. Such a procedure allowed the researcher to observe effects that may not have been highlighted using the previously mentioned statistical methods. The path analyses also allowed the researcher to observe whether the importance of the predictors changed across grades.

## Chapter 4

### Results

#### *Overview*

Early literacy measures were administered to a group of pre-school students each year until they reached first grade. These students came from homes where one of the languages spoken was Spanish. Therefore, each of the measures were administered in both English and Spanish. In addition to the five early literacy measures, each year the students were also assessed on a book task. Students were presented with a storybook and were assessed on how familiar they were with books, whether they comprehended when an examiner read to them, and whether they could read on their own. This measure was also administered in both languages. Multiple linear regression models were utilized to explore the ability of the early literacy measures to predict student performance on the book task for each of the three years of assessment. Finally, path analyses were conducted in order to examine the direct and indirect effects of the measures throughout the years.

#### *Descriptive Statistics*

The means and standard deviations of each of the measures are listed in Table 2 according to grade level. As reported in Paez et al. (2007), with the exception of the phonological awareness measure in pre-kindergarten, the participants generally scored higher on the English measures. The students' poorest performances in Spanish were

observed in the picture vocabulary and memory for sentences measures. In each of these measures, students' pre-kindergarten scores in English surpassed scores obtained in Spanish during first grade. In other words, during first grade, students did not reach the performance levels in Spanish that they had obtained in English as early as pre-kindergarten. For further discussion regarding the participants' performance on these measures and how they compared to their monolingual peers, see Paez et al. (2007) and Paez and Rinaldi (2006).

In this study, the researcher reports findings from the book task which had been assessed by the ECS research group, but never explored. What follows is therefore a summary of the descriptive statistics (Table 2) and reliabilities (Table 3) of the book task. The measure was designed to be identical between the languages. With an average score of about nine in English and seven and a half in Spanish, students were at least making it to the second section of the book task during pre-kindergarten. This means that students knew how to complete basic tasks such as identifying the front of a book, point to the author's name and open the book. Mean scores for the book task in each language demonstrated developmental progression, with scores increasing across grade level.

In kindergarten, the gap between what students could do in English compared to Spanish began to widen. Students tended to comprehend the story best and answer questions involving comprehension when assessed in English during Kindergarten. Finally, students were likely to be able to read at least part of the storybook in English. In contrast, they struggled to simply be able to retell the story when being assessed in Spanish. It is apparent that although these students speak Spanish at home, the absence

of academic instruction in Spanish results in quite limited academic skills in that language.

Table 2

*Means and standard deviations of each measure by grade level*

Measure	Mean	SD	ES	n
<b>Picture Vocabulary</b>				
Pre-K	16.34 (13.84)	4.75 (4.14)	.56	265 (264)
Kinder	19.69 (14.66)	3.68 (4.11)	1.29	260 (257)
Grade 1	22.77 (15.87)	3.89 (4.45)	1.65	260 (257)
<b>Letter Word Identification</b>				
Pre-K	6.85 (5.05)	3.44 (1.90)	.65	265 (264)
Kinder	13.32 (8.42)	4.34 (6.61)	.88	264 (257)
Grade 1	22.67 (15.27)	7.30 (12.55)	.72	260 (257)
<b>Dictation</b>				
Pre-K	6.96 (6.08)	2.15 (1.91)	.43	265 (264)
Kinder	11.47 (9.42)	2.43 (3.63)	.67	264 (257)
Grade 1	15.26 (12.39)	3.46 (5.39)	.63	260 (257)
<b>Memory for Sentences</b>				
Pre-K	29.33 (24.55)	5.19 (6.12)	.84	261 (258)
Kinder	31.24 (25.05)	5.53 (6.70)	1.01	264 (257)
Grade 1	35.22 (27.73)	5.00 (5.51)	1.42	260 (257)
<b>Phonological Awareness</b>				
Pre-K	7.05 (7.56)	5.08 (4.13)	.11	264 (261)
Kinder	16.77 (13.72)	5.34 (4.34)	.63	265 (257)
Grade 1	20.98 (17.17)	3.77 (4.08)	.97	262 (260)
<b>Book Task</b>				
Pre-K	9.01 (7.50)	5.66 (5.19)	.28	262 (256)
Kinder	17.41 (13.15)	4.30 (5.17)	.90	264 (257)
Grade 1	22.19 (16.79)	3.32 (5.87)	1.13	258 (257)

*Note.* All values are raw scores. Values enclosed in parentheses represent the Spanish measures.

The normality of the variables was examined by computing skewness and kurtosis values. A couple of the predictor variables, such as letter-word identification in Spanish raised some concerns with skewness levels higher than the absolute value of 1. Attempts were made to normalize the data by computing log transformations, but such a procedure did not remedy the non-normal distributions. As a result, the data were analyzed with the original student scores.

To assess whether there was heterogeneity of variance, standardized residual plots were generated from the multiple regressions. None of the plots raised concern except for the English book task in first grade. Visual inspection revealed the possibility of a model violation during this year. For lower predicted scores on the book task, there was considerable variability of the residuals. Then for higher predicted scores on the book task, there was less variability and therefore more accurate predictability with the model. Although these possible violations were found, the researcher proceeded with the multiple regression analyses because the procedure is robust against violations of normality and variance. Nevertheless, some caution should be taken with the interpretation of the results.

### *Reliability*

In order to obtain a measure of reliability, Cronbach's alpha was calculated for each grade level the book task was administered. An overall alpha coefficient was also calculated for all three grade levels. A summary of these findings can be found in Table 3. Adequate reliability was obtained in each grade level except during first grade in English ( $\alpha = .64$ ). In general, the Spanish book task demonstrated higher reliabilities each year (excluding pre-kindergarten) than the English book task. The highest internal

consistency reliability was found when Cronbach's alpha was calculated throughout the grades.

Table 3

*Reliability of Book Task*

Grade	Cronbach's alpha	<i>n</i>
Pre-kindergarten 02	.86 (.84)	262 (259)
Kindergarten 03	.75 (.78)	263 (257)
First Grade 04	.64 (.81)	263 (264)
Overall (02- 04)	.88 (.91)	256 (245)

*Note.* Values enclosed in parentheses represent the Spanish measures.

*Correlation Analyses*

Initially, Pearson's correlations between each of the early language and literacy measures were calculated for each grade level. As illustrated in Table 4, the English measures showed higher correlations between each other than the Spanish measures during pre-kindergarten. During kindergarten, a couple of the Spanish measures demonstrated higher correlations than the same measures in English. For example, dictation scores were more correlated with both the picture vocabulary and letter-word identification measures when assessed in Spanish. In first grade, higher correlations were evident between the Spanish measures than between the English measures. In sum, higher correlations between the measures were first seen in English during pre-kindergarten. Then the Spanish measures demonstrated higher correlations as students reached first grade.

Table 4

*Correlations Between the Early Literacy Measures in Pre-kindergarten (N = 247 (238))*

Measure	PV	LW	D	MS	PA
PV	1	.49	.42	.66	.38
LW	.27	1	.74	.43	.46
D	.30	.60	1	.45	.49
MS	.62	.24	.39	1	.47
PA	.22	.34	.39	.30	1

*Correlations Between the Early Literacy Measures in Kindergarten (N = 247 (238))*

Measure	PV	LW	D	MS	PA
PV	1	.50	.44	.63	.42
LW	.45	1	.69	.39	.52
D	.55	.80	1	.38	.54
MS	.59	.31	.36	1	.44
PA	.23	.31	.30	.24	1

*Correlations Between the Early Literacy Measures in First Grade (N = 247 (238))*

Measure	PV	LW	D	MS	PA
PV	1	.53	.55	.51	.42
LW	.54	1	.75	.38	.42
D	.60	.86	1	.37	.43
MS	.61	.48	.54	1	.26
PA	.27	.36	.40	.27	1

Note. Shaded values represent the Spanish measures. PV = Picture Vocabulary; LW = Letter-Word Identification; D = Dictation; MS = Memory for Sentences; PA = Phonological Awareness. All correlations were significant at  $p < .001$ .

A second set of correlations explored the relationship of each predictive measure across grade level (Table 5). For example, the English picture vocabulary score at pre-kindergarten was significantly correlated to the English picture vocabulary score at kindergarten ( $r = .71$ ). Overall, higher correlations were seen for grades closest in time. It was more likely for a predictive measure to demonstrate a higher correlation from pre-kindergarten to kindergarten than from pre-kindergarten to first grade. An exception occurred with memory for sentences in Spanish where the correlation from pre-kindergarten to first grade ( $r = .66$ ) was greater than the correlations from kindergarten to first grade ( $r = .55$ ).

Table 5

*Correlations between the predictive measures across grade level (N = 247 (238))*

	Pre-K to Kinder	Pre-K to 1st grade	Kinder to 1 <sup>st</sup> grade
PV	.71 (.73)	.68 (.66)	.72 (.79)
LW	.58 (.43)	.46 (.30)	.70 (.70)
D	.49 (.52)	.42 (.47)	.55 (.81)
MS	.68 (.66)	.56 (.66)	.57 (.55)
PA	.50 (.27)	.33 (.24)	.56 (.47)

*Note.* Values enclosed in parentheses represent the Spanish measures. PV = Picture Vocabulary; LW = Letter-Word Identification; D = Dictation; MS = Memory for Sentences; PA = Phonological Awareness. All correlations were significant at  $p < .001$ .

Simple correlations were also calculated each year between the predictive measures and the book task (Table 6). Picture vocabulary showed a higher correlation with book task in English during pre-kindergarten. However, higher correlations were seen in Spanish during kindergarten and first grade. An interesting phenomenon was observed for the remaining measures. During pre-kindergarten and kindergarten the remaining measures demonstrated higher correlations in English. Yet, once students reached first grade, the correlations were higher in Spanish between letter-word

identification, dictation, memory for sentences, and phonological awareness with the book task.

Table 6

*Correlations Between Predictive Measures and Book Task (N = 247 (238))*

	Pre-K	Kinder	First Grade
PV	.67 (.50)	.62 (.70)	.51 (.67)
LW	.48 (.34)	.60 (.54)	.53 (.56)
D	.50 (.43)	.58 (.57)	.50 (.61)
MS	.62 (.48)	.63 (.55)	.45 (.60)
PA	.41 (.33)	.56 (.42)	.43 (.47)

*Note.* Values enclosed in parentheses represent the Spanish measures. PV = Picture Vocabulary; LW = Letter-Word Identification; D = Dictation; MS = Memory for Sentences; PA = Phonological Awareness. All correlations were significant at  $p < .001$ .

### *Regression Analyses*

*Assumptions.* Multiple regression analyses are based on several assumptions and the data were examined in order to justify the use of such procedures. The assumptions that errors are independent, normally distributed, and with constant variance were explored with residual plots (Stevens, 1999). A graphical display of the residuals against predicted values were created for each grade level and language. No model violations were indicated based on observation of the plots.

The presence of influential data points were surveyed by calculating studentized residuals and Cook's distance values. The maximum values found included a studentized residual value of 3.05 and a Cook's D values of 0.14. As a result, no alarms were raised in regards to the possibility of any case having an undue influence on the regression analyses.

Collinearity, the undesirable circumstance where high correlations exist between the independent variables, was examined. Tolerance statistics were calculated for each of

the models. This value indicates the proportion of variance that is not accounted for by the other variables in the model (Kinnear & Gray, 2006). Another measure of collinearity that was computed was the variance inflation factor (VIF). Neither one of these collinearity gauges revealed that intercorrelations among the predictors were problematic.

### *Multiple Regression*

Simultaneous multiple linear regression analyses were used to develop models for predicting students' book task scores from their early language and literacy scores (e.g., picture vocabulary, letter-word identification, dictation, memory for sentences, and phonological awareness). These analyses were conducted each year (pre-kindergarten, kindergarten, and 1<sup>st</sup> grade) and in each language (English and Spanish). In addition, multiple regressions were analyzed again for participants who had no missing data in either language. This latter procedure allowed the researcher to make direct comparisons across the languages since the same participants were used in each analysis.

Nevertheless, the data were analyzed by language in order to make observations with the maximum data points available for each language. In each of the following tables (Tables 7a – 9a), multiple regressions with the maximum number of N's will be found above the multiple regressions with the same sample size (Tables 7b -9b).

Table 7a

*Predicting Book Task Scores in Pre-kindergarten (N = 247 (238))*

Predictor	B		
Picture Vocabulary	.49 (.37)	.40***	(.29)***
Letter Word Identification	.10 (.10)	.06	(.04)
Dictation	.41 (.59)	.16*	(.22)**
Memory for Sentences	.25 (.15)	.24***	(.17)*
Phonological Awareness	.06 (.16)	.05	(.13)*

Note.  $R^2 = .54^{***}$  (.37)\*\*\* Raw scores were used for calculations. Values enclosed in parentheses represent the Spanish measures. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$ .

Table 7b

*Predicting Book Task Scores in Pre-kindergarten (N = 224)*

Predictor	B		
Picture Vocabulary	.48 (.38)	.40***	(.29)***
Letter Word Identification	.12 (.11)	.07	(.04)
Dictation	.36 (.59)	.14*	(.21)**
Memory for Sentences	.28 (.16)	.26***	(.19)**
Phonological Awareness	.06 (.17)	.06	(.13)*

Note.  $R^2 = .56^{***}$  (.38)\*\*\* Raw scores were used for calculations. Values enclosed in parentheses represent the Spanish measures. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$ .

During pre-kindergarten (Table 7a) the variables found to significantly predict the book task in English included picture vocabulary, dictation, and memory for sentences ( = .40, .16, and .24, respectively). The five early literacy and language variables produced an  $R^2$  of .54,  $F(5, 241) = 57.02$ ,  $p < .01$  for the prediction of the English book task. In Spanish, these predictor variables were also found to significantly predict the book task. Plus, phonological awareness also significantly contributed to the prediction of the book task in Spanish. An  $R^2$  of .37,  $F(5, 232) = 27.65$ ,  $p < .01$  was obtained for the prediction of the book task in Spanish.

When the data were analyzed with the same number of participants, no drastic changes were observed (Table 7b). Nonetheless, memory for sentences demonstrated an increase in significance in predicting the Spanish book task and the  $R^2$  for both the English and Spanish models slightly increased. The English model produced an  $R^2$  value of .56,  $F(5, 218) = 54.67, p < .01$ . Finally, the comparable Spanish model produced an adjusted  $R^2$  value of .38,  $F(5, 218) = 26.97, p < .01$ . In both models and both languages, picture vocabulary produced the highest standardized beta coefficient. These findings are aligned with the aforementioned correlation analyses that identified picture vocabulary as having the highest correlation with the book task in each language during pre-kindergarten.

Cohen's (1992) effect size  $f^2 = R^2 / (1 - R^2)$  was computed for the English model in pre-kindergarten ( $d = 1.27$ ). This value can be interpreted as indicating a large effect size using Cohen's rough guidelines (.02 small, .15 medium, .35 large). For the Spanish model, a large effect size of 0.61 was also obtained. Effect sizes will only be reported for the models with 224 participants which allows for comparison across languages.

Table 8a

*Predicting Book Task Scores in Kindergarten (N = 247 (238))*

Predictor	B		
Picture Vocabulary	.22 (.57)	.20***	(.44)***
Letter Word Identification	.23 (.14)	.22***	(.19)**
Dictation	.26 (.07)	.15**	(.05)
Memory for Sentences	.25 (.15)	.31***	(.18)**
Phonological Awareness	.11 (.25)	.15**	(.20)***

Note.  $R^2 = .62$ \*\*\* (.62)\*\*\* Raw scores were used for calculations. Values enclosed in parentheses represent the Spanish measures.  
\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$ .

Table 8b

*Predicting Book Task Scores in Kindergarten (N = 224)*

Predictor	B		
Picture Vocabulary	.23 (.58)	.21***	(.45)***
Letter Word Identification	.21 (.14)	.21**	(.19)**
Dictation	.25 (.07)	.15*	(.05)
Memory for Sentences	.26 (.13)	.32***	(.16)**
Phonological Awareness	.11 (.23)	.14*	(.19)***

Note.  $R^2 = .62^{***}$  (.61)\*\*\* Raw scores were used for calculations. Values enclosed in parentheses represent the Spanish measures.  
\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$ .

During kindergarten, all of the predictor variables significantly contributed to the prediction of the book task in English (Table 8a). The greatest predictors were memory for sentences ( $\beta = .31$ ), letter word identification ( $\beta = .22$ ), and picture vocabulary ( $\beta = .20$ ). At the kindergarten level, phonological awareness was found to significantly contribute to the prediction of the book task in English ( $\beta = .15$ ). The predictor variables produced an  $R^2$  value of .62,  $F(5, 241) = 76.33, p < .01$  for the prediction of the English book task. In Spanish, the only predictor that was not found to significantly contribute to the prediction of the book task was dictation. The variable with the greatest predictive power in Spanish turned out to be picture vocabulary ( $\beta = .44$ ). The Spanish early literacy and language variables yielded an  $R^2$  value of .62,  $F(5, 232) = 74.26, p < .01$ .

When participants were matched in English and Spanish to create the model, some decreases were seen in the significance of the predictive ability of letter word identification, dictation and phonological awareness in English (Table 8b). The  $R^2$  value for the comparable model was also .62,  $F(5, 218) = 69.67, p < .01$ . No changes in significance levels were observed in Spanish when the comparable participant model was utilized. The  $R^2$  value in Spanish turned out to be .61,  $F(5, 218) = 69.07, p < .01$ .  $R^2$

values for all the models analyzed in kindergarten were at about .62, indicating more similarity between the languages than in the other grades. Effect sizes in kindergarten were 1.63 in English and 1.56 in Spanish. The effect sizes were again large and quite similar between languages in kindergarten.

Table 9a

*Predicting Book Task Scores in First Grade (N = 247 (238))*

Predictor	B		
Picture Vocabulary	.13 (.47)	.15*	(.37)***
Letter Word Identification	.10 (.01)	.22**	(.03)
Dictation	.10 (.17)	.10	(.17)
Memory for Sentences	.14 (.23)	.22***	(.22)***
Phonological Awareness	.17 (.34)	.19**	(.24)***

Note.  $R^2 = .42^{***}$  (.61)\*\*\* Raw scores were used for calculations. Values enclosed in parentheses represent the Spanish measures.  
\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$ .

Table 9b

*Predicting Book Task Scores in First Grade (N = 224)*

Predictor	B		
Picture Vocabulary	.11 (.49)	.14	(.39)***
Letter Word Identification	.10 (.02)	.23**	(.04)
Dictation	.08 (.14)	.09	(.13)
Memory for Sentences	.15 (.24)	.21**	(.23)***
Phonological Awareness	.18 (.34)	.20**	(.24)***

Note.  $R^2 = .43^{***}$  (.61)\*\*\* Raw scores were used for calculations. kValues enclosed in parentheses represent the Spanish measures.  
\*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$ .

The contributions of greatest influence during first grade (Table 9a) were seen with memory for sentences ( $\beta = .22$ ), letter word identification ( $\beta = .22$ ) and phonological awareness ( $\beta = .19$ ). Dictation no longer contributed to the prediction of the book task during first grade. An  $R^2$  of .42,  $F(5, 241) = 35.33$ ,  $p < .01$  was observed for the prediction of the English book task.

In Spanish, letter word identification and dictation made no significant contributions to the prediction of the book task scores. Picture vocabulary ( $\beta = .37$ ), phonological awareness ( $\beta = .24$ ) and memory for sentences ( $\beta = .22$ ) were all significant predictors of the book task ( $p < .001$ ). An  $R^2$  value of .61,  $F(5, 232) = 71.17, p < .01$  was generated for the prediction model in Spanish during first grade.

Once the comparative model was analyzed, picture vocabulary was observed to join dictation in not contributing to the prediction of the book task in English (Table 9b). The  $R^2$  levels also remained about the same with these models. In English an  $R^2$  of .42,  $F(5, 218) = 32.21, p < .01$  was generated. In Spanish, no great changes were observed. Picture vocabulary contributed a bit more to the prediction of the Spanish book task ( $\beta = .49$ ). There was no change in  $R^2$ , again producing a value of .61,  $F(5, 218) = 67.77, p < .01$  when the groups were compared using the same number of students. During first grade, the effect size of the model in English was 1.38. For the first time the Spanish model surpassed the English model with an effect size of 1.56.

#### *Path Analysis*

The following figure (Figure 1) represents the path model that was tested in both English and Spanish with AMOS version 7.0. Paths were drawn from the predictor to the outcome variables for each grade level. Table 10 presents the results of the model, specifically unstandardized and standardized estimates, and their significance. The indirect effects were tested, but none of the effects were found to be statistically significant. In order to determine the appropriateness of the proposed model, the researcher reviewed the fit indices for each language.

For the English language model, indices were mixed making it difficult to firmly state whether the model was a good fit. This was evidenced by the Chi-square statistic,  $\chi^2(92, 267) = 319.40, p < .001$  which indicated statistically significant lack of fit. In addition, the root mean square error of approximation (RMSEA = .10) was above the recommended cut-off of .08 or less as an indication of an adequate fit. However, the comparative fit index (CFI = .93) produced a value close to one which indicated a good fit. Although no conclusions were made regarding the degree of fit the model generated, the researcher believed it was important to highlight some of the notable findings.

A similar pattern for the fit indices was observed for the Spanish model. Nevertheless, the fit of the Spanish model was not as good as that of the English model. The Chi-square statistic,  $\chi^2(98, 267) = 486.40, p < .001$  also revealed statistical significance for the Spanish model. The root mean square error of approximation (RMSEA = .12) was higher for the Spanish model, indicating less than adequate fit. The comparative fit index (CFI = .88) was below the widely used cutoff of .95. Taken together, these values would indicate less than acceptable fit.

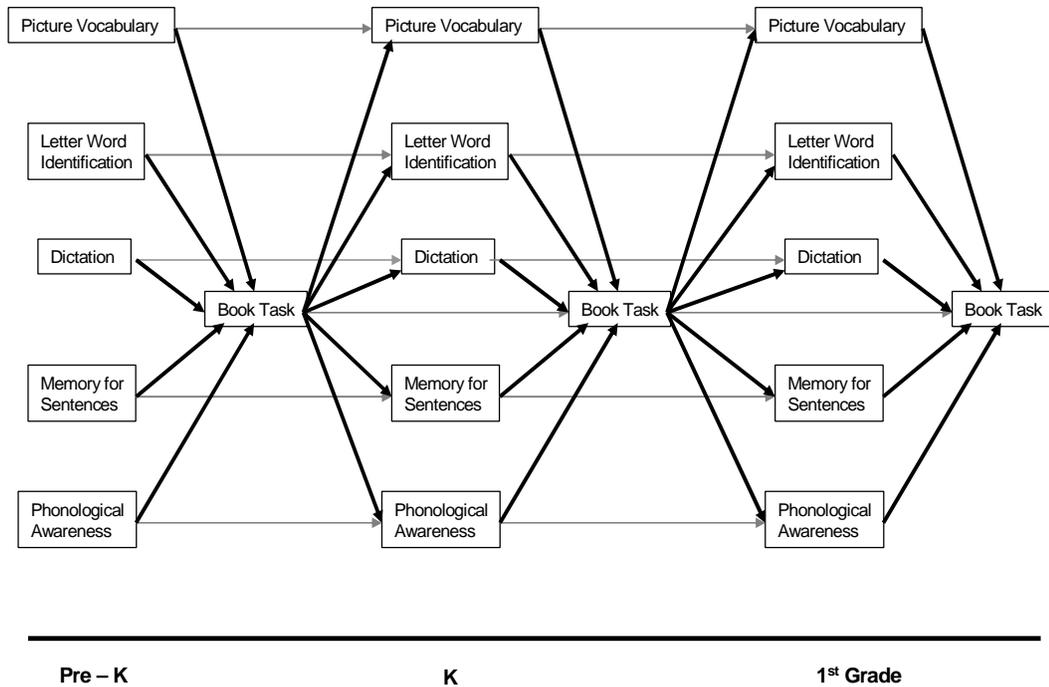


Figure 1. This figure represents the path model chosen for the path analysis. Thicker arrows indicate direct paths from independent to dependent variables and vice versa. Thinner arrows indicate predictor variables across grade level.

*English path analysis.* The final path model for the English language test scores is displayed in Figure 2. The pathway coefficients are represented as standardized beta weights to allow for comparisons with beta weights obtained with the multiple regression analyses.

## English

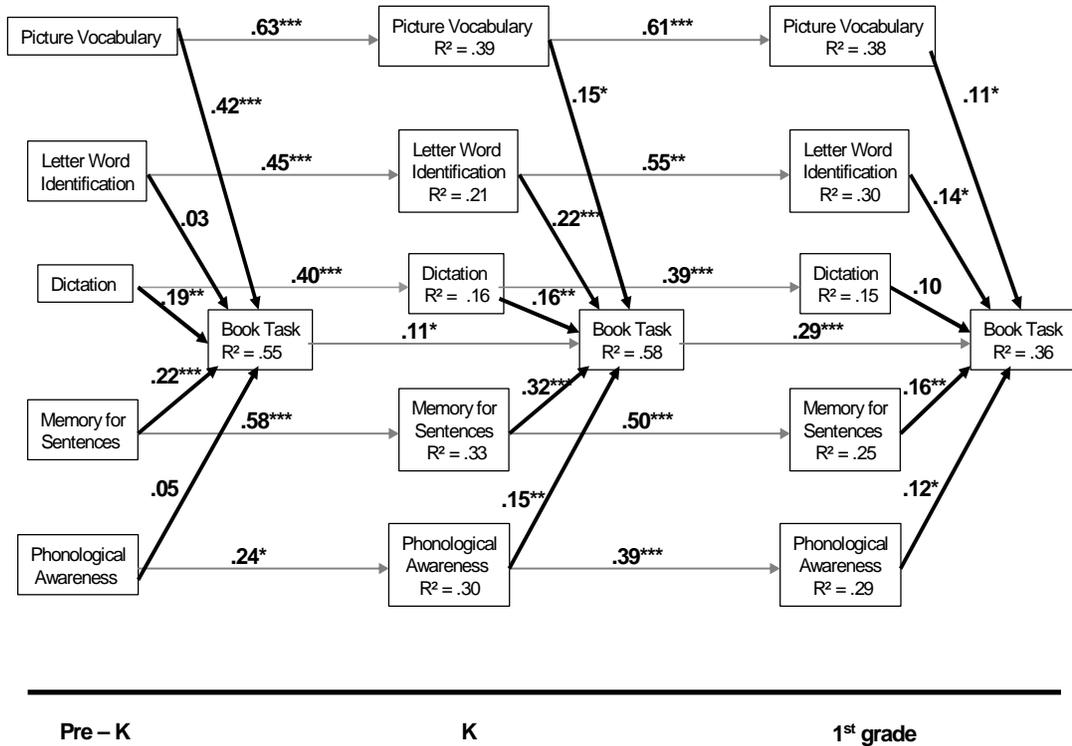


Figure 2. Pathway coefficients are represented as standardized beta weights. Thicker arrows indicate direct path from independent to dependent variables. Thinner arrows indicate predictor variables across grade level. \*  $p < .05$  \*\*  $p < .01$  \*\*\*  $p < .001$ .

*Predicting pre-kindergarten book task scores.* The early language and literacy skills that predicted students' book task scores in pre-kindergarten were picture vocabulary ( $\beta = .42$ ), memory for sentences ( $\beta = .22$ ), and dictation ( $\beta = .19$ ). Each of the aforementioned predictors were significant at the .01 level. Although the beta-weights ranged from small to moderate, they were all positive. This indicates that higher scores on these three early language and literacy skills were associated with higher scores on the English book task. The model accounted for 55% of the variance in students' book task scores in pre-kindergarten.

*Predicting kindergarten book task scores.* All five predictors were statistically significant ( $p < .05$ ) during kindergarten. Memory for sentences ( $\beta = .32$ ) was the predictor that produced the greatest beta-weight in comparison to the other measures. Letter word identification ( $\beta = .22$ ) and phonological awareness ( $\beta = .15$ ), predictors that did not have significant associations with the book task at pre-kindergarten, were now significant in kindergarten. Picture vocabulary ( $\beta = .15$ ) and dictation ( $\beta = .16$ ) remained significant predictors of the book task at kindergarten. The model accounted for 58% of the variance in the student's book task scores in kindergarten.

*Predicting first grade book task scores.* The set of first grade predictors, as well as scores on the book task in first grade, reflected a change in scores from pre-kindergarten through first grade. All of the predictors, except for dictation ( $\beta = .10$ ), were statistically significant ( $p < .05$ ). The full unconstrained model accounted for 36% of the variance in the final criterion variable (student's book task scores in first grade).

Table 10

*Standardized and Unstandardized Path Coefficients*

Path Name	Unstandardized Path Coefficient	Standardized Path Coefficient	Sig. Test
To Pre-K Book Task			
Picture Vocabulary	.50 (.34)	.42 (.27)	y (y)
Letter Word Identification	.05 (.08)	.03 (.03)	n (n)
Dictation	.50 (.55)	.19 (.21)	y (y)
Memory for Sentences	.24 (.17)	.22 (.20)	y (y)
Phonological Awareness	.06 (.12)	.05 (.10)	n (n)
To Kindergarten Book Task			
Picture Vocabulary	.17 (.46)	.15 (.37)	y (y)
Letter Word Identification	.22 (.16)	.22 (.21)	y (y)
Dictation	.27 (.03)	.16 (.02)	y (n)
Memory for Sentences	.24 (.14)	.32 (.20)	y (y)
Phonological Awareness	.11 (.17)	.15 (.16)	y (y)
To 1 <sup>st</sup> grade Book Task			
Picture Vocabulary	.09 (.32)	.11 (.25)	y (y)
Letter Word Identification	.06 (.04)	.14 (.10)	y (n)
Dictation	.09 (.05)	.10 (.05)	n (n)
Memory for Sentences	.10 (.16)	.16 (.17)	y (y)
Phonological Awareness	.10 (.20)	.12 (.16)	y (y)
Pre-K to Kindergarten Book Task	.08 (.22)	.11 (.24)	y (y)
Kindergarten to 1 <sup>st</sup> grade Book Task	.22 (.38)	.29 (.36)	y (y)



significant predictors of the Spanish book task. The model accounted for 35% of the variance in students' scores during pre-kindergarten.

*Predicting kindergarten book task scores.* All the predictors, excluding dictation, were significant predictors of the book task in kindergarten. Students' picture vocabulary ( $r = .37$ ), letter word identification ( $r = .21$ ), memory for sentences ( $r = .20$ ), and phonological awareness ( $r = .16$ ) scores significantly predicted book task scores at the .001 level. The model accounted for 58% of the variance in change in students' book task scores from pre-kindergarten to kindergarten.

*Predicting first grade book task scores.* As with the English language analyses, the set of first grade predictors and the book task reflected scores from pre-kindergarten through first grade. In this grade level, letter word identification no longer made a statistically significant contribution to predicting book task scores. That is, students' picture vocabulary ( $r = .25$ ), memory for sentences ( $r = .17$ ), and phonological awareness ( $r = .16$ ) skills were all significantly ( $p < .001$ ) related to students' book task scores in first grade. The model accounted for 48% of the variance in change in students' book task scores from pre-kindergarten to kindergarten to first grade.

## Chapter 5

### Discussion

The main purpose of this study was to explore how well early language and literacy skills predict the reading abilities of a group of bilingual students. A number of analyses were run in order to explore three main questions in each of the languages spoken by the students. First, the researcher examined the most important skills for predicting reading abilities. This was done in each of the grade levels assessed in order to investigate whether there were differences across the grade levels. Finally, the direct and indirect effects of these predictors across grade levels were explored. Throughout this chapter, a summary of the findings along with implications for research and practice are discussed.

#### *Summary of Findings*

The researcher began to explore the first research question by analyzing the simple correlations between the predictors and the book task. Throughout the grades, it was observed that picture vocabulary and memory for sentences had some of the highest correlations with the book task in both languages. Picture vocabulary had a correlation of .67 in English during pre-kindergarten and then the same correlation of .67 was seen in Spanish during first grade. Such results are not surprising considering the abundance of studies that emphasize the strong relationship that exists between vocabulary and reading skills (e.g., Lonigan, Burgess, & Anthony, 2000; Wagner, Torgesen, Rashotte, Hecht,

Baker, Burgess et al., 1997). Memory for sentences had correlations of .62 in pre-kindergarten and .63 in kindergarten with the English book task. A similar correlation of .60 was seen with memory for sentences during first grade. In sum, after calculating some basic bivariate correlations, it was apparent that picture vocabulary and memory for sentences would likely result in important predictors for the book task.

These initial findings were confirmed when the multiple regression and path analyses were conducted. Picture vocabulary was one of the most important predictors of the book task in both languages throughout the years. An exception occurred in English during first grade when picture vocabulary was not found to be significant with the multiple regression analyses. During first grade, letter word identification, memory for sentences, and phonological awareness were among the most dominant predictors of the book task in English. Yet, the path analysis conducted in English found picture vocabulary to remain a significant predictor of the book task in first grade. Memory for sentences remained a significant predictor in both languages throughout each grade level.

Paez and Rinaldi (2006) analyzed the same data set but focused mainly on how kindergarten oral language skills (e.g., picture vocabulary, memory for sentences, phonological awareness) predicted first grade word reading abilities as indicated by the letter word identification measure. Their analyses revealed vocabulary and phonological awareness to be the best predictors of word reading abilities. Although different outcome measures were utilized by Paez and Rinaldi (2006), findings were rather parallel with this study. This study extended their research by including early literacy variables in the prediction of reading ability (e.g., letter word identification, dictation). In addition, the

outcome variable in this present study assessed not only word reading abilities, but also comprehension abilities.

The bivariate correlations displayed in Table 4 show that picture vocabulary and memory for sentences demonstrated one of the highest correlations between the predictor variables. Taking into consideration the findings reported by Proctor et al. (2005) that the strength of students' vocabulary is greatly associated with student's ability to comprehend both spoken and written language, the reason for the high correlation becomes apparent. If a student does not possess the vocabulary dictated during the memory for sentences measure, that student will struggle to comprehend and have difficulties repeating the sentence back to the examiner. The effects of this finding as they relate to results obtained in the book task will be discussed subsequently.

In pre-kindergarten, dictation was found to significantly contribute in both the multiple regression and path analyses, to the prediction of the book task in both English and Spanish. Yet, letter-word recognition was not found to be significant. This finding is quite surprising considering the extensive amount of literature linking letter-word recognition skills as an important predictor of reading abilities (Lyon & Chhabra, 1996; Pullen & Justice, 2003; Whitehurst & Lonigan, 1998). The researcher was aware that aside from the intercorrelations found with picture vocabulary and memory for sentences, there were also high correlations between letter word identification and dictation. It makes sense that if a student is able to identify a letter or a word, they are just as likely to be able to write that letter or word down for the examiner when it is dictated to them. As a result, the researcher suspected that the correlation dictation demonstrated with letter-

word identification impacted the predictors' ability to appear as significant in the prediction model.

Phonological awareness was found to be a significant predictor of the book task in Spanish in the multiple regression analysis. Significance was not maintained once the path analysis was conducted ( $p = .09$ ). Students scored higher on the phonological awareness measure in Spanish during pre-kindergarten, but it seems that students did not score high enough to produce significant differences with the path analysis.

The results in English are not surprising considering that children do not develop good phonological awareness skills until about six years of age when they have received explicit instruction in reading (Goswami, 2005). Plus, as previously noted by Gerber et al. (2004), by definition, ELLs have had limited exposure to important pre-requisite skills such as phonology. Such limited phonological awareness in English and greater skills in Spanish implied that the majority of children had a greater understanding of Spanish until school enrollment in an English-only environment. When one observes how students fell further behind Spanish norms as they progressed through school, it became evident that students had to abandon their Spanish at the expense of learning English.

During kindergarten, some additional interesting findings were observed. Both the multiple regression and path analyses indicated that dictation was a significant predictor of the book task in English. Yet in Spanish, dictation was not found to be a significant predictor of the book task. Such a finding may be a result of the students increased skills in phonological awareness in English. As noted earlier with the findings of MacDonald and Cornwall (1995), the best predictor in kindergarten of future spelling abilities is phonological awareness. In both languages and with both methods of

analyses, letter-word recognition turned out to be a significant predictor of the book task during kindergarten. It is perhaps likely that after phonological awareness and letter word identification skills have been utilized in a model to predict reading abilities, a measure of writing and spelling may have little to add to the prediction model.

Finally, in first grade, letter word identification was found to be a significant predictor of the English book task using both methods of analyses. Picture vocabulary and dictation were not found to be statistically significant with the multiple regression analysis. Only dictation was not found to be significant when the path analysis was used. The results of both methods of analyses in Spanish indicated that both letter word identification and dictation did not significantly predict the book task. In conclusion, the most important variables observed to predict the reading abilities of bilingual students from pre-kindergarten through first grade include vocabulary, letter-word recognition, listening comprehension, and phonological awareness.

These findings along with the descriptive statistics reported for the book task in Chapter IV can be integrated to produce a greater understanding of the skills these bilingual students possess. In Chapter IV, it was noted that as early as kindergarten, the gap between what students could do in English compared to Spanish began to widen. At kindergarten, students tended to comprehend the story best and answer questions involving comprehension when assessed in English.

The phenomenon reported in the previous paragraph is likely a result of students' limited vocabulary in Spanish. Proctor et al. (2005) discussed the importance of having a strong vocabulary in order to be able to comprehend both spoken and written language. Paez et al. (2007) reported that students in the ECS study fell about two standard

deviations below their monolingual peers in both picture vocabulary and memory for sentences. Memory for sentences was a significant predictor of the book task each year, in each language, and with each method of analysis. Such findings place an emphasis on the importance of listening comprehension in predicting reading ability.

Further support for the simple view of reading (Hoover & Gough, 1990) was established with the results of this study. To recap, the theory states that a student with good decoding and listening comprehension skills is likely to be a good reader. In both kindergarten and first grade, the analyses in English indicated that decoding and listening comprehension skills were the two most important predictors of reading abilities. Therefore, support was added to Hoover and Gough's (1990) claims that good decoding and listening comprehension skills lead to more skilled reading in English.

On the contrary, the same results were not obtained in Spanish. Vocabulary was observed to make the most important contributions in Spanish from pre-kindergarten throughout first grade. Decoding skills were not observed to be significant predictors of the Spanish book task in first grade. Nevertheless, listening comprehension skills maintained their importance throughout each of the grades in Spanish. These results are likely to have been affected by the low scores obtained in Spanish by the sample studied. Further discussion regarding the effect of low scores on the prediction model can be found in the limitations section.

The similar findings of this study with those of the simple view of reading theory highlight the importance of having included early literacy measures such as letter word-recognition in the prediction models of readings abilities in this study. Oral language measures alone may underestimate the reading abilities of bilingual students. Paez and

Rinaldi (2006) reported that English oral language skills lagged significantly behind monolingual norms. In contrast, letter-word recognition skills were developing at a normal rate. In essence, although the importance of oral language abilities has already been established, these abilities should not be the only indicators of reading abilities. This is especially important for bilingual students whose performance on early literacy measures has been observed to surpass their oral language performance (Paez et al., 2007).

### *Implications for Research*

The researcher did not want to place restrictions on the variables entered into the model by using a stepwise or hierarchical model. Therefore, a simultaneous multiple regression procedure was chosen in order to utilize all the predictor variables in each grade level and allow for comparisons. Such a procedure may have limited a variable from appearing as statistically significant because of its correlation with another variable in the model.

Dickinson, McCabe, Anastasopoulos, Peisner-Feinberg and Poe (2003) analyzed their data utilizing a hierarchical method and found that vocabulary and phonological awareness contributed equally when predicting print knowledge among three- and four-year-olds. Both the multiple regression and path analyses conducted in this study did not identify phonological awareness in English to be a significant predictor for the four year olds in the sample. As a result, the utilization of a methodological procedure such as hierarchical regression may indicate whether the findings of Dickinson et al. (2003) replicated with this group of students.

Considering the possible impact of intercorrelations noted above between the predictor variables, it seems reasonable to suggest removing the dictation measures from the model. Running these same analyses conducted in this study with just the picture vocabulary, letter word identification, memory for sentences, and phonological awareness measures in the models would be interesting to explore. Dictation did not result to be a significant predictor in first grade with any of the methods of analysis. Providing educators with four simple measures that could be administered early and be most indicative of their success or failure in reading would be ideal. For that reason, the importance of those four measures should be evaluated in future research.

#### *Limitations*

Some precautions should be taken when interpreting the results of this study because several limitations were found. Perhaps the greatest limitation existed with the measure chosen as the dependent variable, the book task. Although the book task was developed by the ECS research group to parallel early literacy measures, there is a lack of information regarding the measure. Besides the reliability analysis calculated in this study, no other examinations of reliability and validity have been conducted with this measure. Another limitation of the book task is that there are no norms available with which to compare the performance of this group of bilingual students.

A finding noted by Dickinson et al. (2003) was that language was a much stronger predictor when students achieved within normal levels in phonological sensitivity than when students scored in the low end of phonological sensitivity. It was also found that phonological sensitivity was a much stronger predictor when students displayed normal language skills than when these language skills were deficient. Such findings suggest

that when student's skills are developing within normal ranges, literacy is supported by both language and phonological sensitivity skills. Yet, when students experience difficulties in one language area (e.g., phonological awareness, vocabulary), the impact of this deficiency may generalize into other skills very early in the literacy process. Students in this study were performing well below norms. It may therefore be possible that there was some loss in the predictive power of the variables examined in this study because of the low achieving group of students sampled.

### *Implications for Practice*

With the reauthorization of the Individuals with Disabilities Educational Act (IDEA) of 2004, the use of Response to Intervention (RTI) is permitted. One of the key components of RTI involves systematic screening and progress monitoring. Such procedures are implemented in order to catch students before they fail. Researchers such as Coleman, Buysse and Neitzel (2006) have emphasized in a research synthesis they conducted of the use of RTI that intervening in kindergarten, or ideally earlier, is a framework that can make an impact on at risk students. Research has pointed out speech and language delays, and phonological processing deficits as being some of the precursors of learning disabilities (Coleman, Buysse, & Neitzel, 2006). Therefore, educators need to conduct universal screenings of key language and early literacy skills, such as the ones highlighted as important in this study, to identify these at risk students.

A lack of information still exists regarding the identification of pre-school students at-risk for learning disabilities and age-appropriate interventions. This study was an attempt to better understand what areas bilingual students struggle with that are associated with reading. These areas highlighted as deficient as early as pre-kindergarten

can be targeted for intervention. Much emphasis has been placed on the importance of phonological awareness in predicting literacy (e.g., Adams, 1990; Swan & Goswami, 1997). That importance of phonological awareness should not be downplayed but educators should make sure to balance the curriculum by building language skills such as vocabulary.

Bilingual students split their vocabulary between two languages and as a result score well below average on monolingual norms in assessments of vocabulary (Cobo-Lewis et al., 2002; Umbel et al., 1992). Their vocabulary skills should not be assessed in English only because such practices only demonstrate half their knowledge. As Dickinson et al. (2003) reported, when students perform within normal ranges in both phonological awareness and vocabulary, their literacy skills increase in a strongly predictable way. However, when they demonstrate deficiencies in either vocabulary or phonological sensitivity skills, their overall literacy skills suffer. So it benefits educators to make every effort to build both skills.

#### *Directions for Future Research*

Since the researcher is unaware of any early language and literacy measure that explores the development of reading in both English and Spanish, more investigations of the validity of the measure are called for. If the book task does indeed turn out to be a validated tool for assessing early literacy skills, then it should be used with other samples of bilingual students. Ideally, the same measures should be implemented with similar low-income bilingual students who receive instruction in Spanish. Finally, a group of monolingual peers should also be assessed utilizing the English measures in order to have a basis for comparison.

Perhaps the best use of resources should be utilized to investigate what practices in pre-kindergarten and kindergarten work best to foster rapid growth in the vocabulary skills of bilingual students. Placing bilingual students in English-only environments has not shown to build upon their already deficient vocabulary (Paez et al., 2007). It is therefore imperative to explore alternatives in the curriculum that most effectively enrich the vocabulary of bilingual students. Paez and Rinaldi (2006) demonstrated that Spanish word reading skills in kindergarten was a significant predictor of English word reading ability during first grade. Such findings imply that building students' literacy skills in Spanish may help them to better achieve in English literacy. These findings lend more support to Cummin's (1979) developmental interdependence hypothesis. Furthermore, if students receive instructional support in Spanish, the gap in skills with their monolingual peers may diminish. As a result, stronger prediction models are likely to be obtained with scores within normal ranges. The study of cross language transfer may also be more appropriate when students receive instruction in Spanish and score within normal ranges.

The majority of the students (83%) in this study came from homes where their parents mainly communicated with them in Spanish. These parents may have felt incapable of helping with their children's literacy in English. Yet, multiple research findings indicate that the best results may be obtained if parents help educators in building the skills students already possess in Spanish (Manis et al., 2004). The achievement gap reported in the review of literature highlighted the gravity of the reading problem educators face with ELLs. It is unlikely that the achievement levels demanded by NCLB will be attained unless resources such as parents and the community are also tapped.

## *Conclusion*

Only the tip of the iceberg has been explored with the research questions posed in this study. The reality is that much remains to be investigated in terms of the impact of early language and literacy skills on bilingual students becoming proficient readers. The prominent variables found in this study across pre-kindergarten through first grade included vocabulary, letter word recognition, listening comprehension and phonological awareness. These are the same skills that have been demonstrated to be of most importance for monolingual students. Nonetheless, some uncertainty still remains in regards to whether bilingual students benefit from the same instructional supports that monolingual students benefit from or whether different instructional approaches may be needed.

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## Appendices

Appendix A: English Book Task

**BOOK TASK**

\*\*\*\*\* ENTIRE TASK IS TAPE RECORDED\*\*\*\*\*

**SECTION I**

1. Hand the book to the child upside down and backwards. Say to the child:  
WHERE'S THE FRONT OF THE BOOK?
2. THE TITLE OF THIS BOOK IS THE CARROT SEED. CAN YOU SHOW ME  
WHERE IT SAYS THAT ON THE COVER?
3. WHAT'S THE BOY DOING?
4. **THE CARROT SEED BY RUTH KRAUSS**. Point to “by Ruth Krauss.”  
WHAT DID RUTH KRAUSS DO?
5. **PICTURES BY CROCKETT JOHNSON**. Point to “Pictures by Crockett  
Johnson.” WHAT DID CROCKETT JOHNSON DO?
6. I'M GOING TO READ YOU THIS BOOK. CAN YOU OPEN THE BOOK  
FOR ME?
7. Point to the second page; not to the print. SHOW ME WHERE TO START  
READING.

Read the story. Finish with THE END.

If three or more squares are checked off for Section I, continue to Section II;  
otherwise end task here.

## SECTION II

9. Go back to the second page. NOW LET'S LOOK AT THE BOOK AGAIN. **A LITTLE BOY PLANTED A CARROT SEED. HIS MOTHER SAID, I'M AFRAID IT WON'T COME UP. CAN YOU TELL ME WHAT THE BOY'S FATHER SAID?**
10. **HIS FATHER SAID, I'M AFRAID IT WON'T COME UP. AND HIS BIG BROTHER SAID IT WON'T COME UP. SHOW ME WHERE THE WORD 'BROTHER' IS ON THIS PAGE.**
11. **EVERY DAY THE LITTLE BOY PULLED UP THE WEEDS AROUND THE SEED AND SPRINKLED THE GROUND WITH WATER. SHOW ME WHAT HE PULLED OUT OF THE GROUND.**
12. **BUT NOTHING CAME UP. AND NOTHING CAME UP. EVERYONE KEPT SAYING IT WOULDN'T COME UP. IS SOMETHING GOING TO COME UP?**

If child answers only "Yes," then WHAT WILL COME UP?

14. **BUT HE STILL PULLED UP THE WEEDS AROUND IT EVERY DAY AND SPRINKLED THE GROUND WITH WATER. AND THEN, ONE DAY...A CARROT CAME UP. JUST AS THE LITTLE BOY HAD KNOWN IT WOULD.**  
WHAT DOES THE BOY HAVE IN HIS WHEELBARROW?  
**A CARROT!!!**

If four or more squares are checked off in Section II, continue to Section III;  
otherwise end task here.

## SECTION III

15. NOW YOU TELL ME THE STORY.

Hand the book to the child open to the second page. Let the child turn the pages.

If child begins to read (i.e. decode text), then **JUST TELL ME THE STORY FIRST AND WE'LL READ IT LATER.**

If child repeats the **text** either partially or substantially continue to Section IV;  
otherwise end task here.

## SECTION IV

16. Turn to the first page of text I'D LIKE YOU TO TRY TO READ THIS BOOK FOR ME. LET'S START HERE (turn to the second page of the book). I'LL HELP YOU IF YOU GET STUCK.

Point to each word. Supply correct word whenever the child hesitates or misreads a word.

Stop the child after "His father said..." if assessor is providing more than half of the words on a page. Assessor finishes reading the book.

Stop the child after "Every day..." if assessor is providing more than two words per page. Assessor finishes reading the book.

THE END! WE'RE DONE!

Appendix B: Spanish Book Task

**PRUEBA DEL LIBRO**

\*\*\*\*\* **GRABAR TODA LA PRUEBA** \*\*\*\*\*

SECCIÓN I

8. Dé el libro al niño/a boca abajo y al revés. ¿CUÁL ES LA PORTADA DEL LIBRO?
9. EL TÍTULO DE ESTE LIBRO ES LA SEMILLA DE ZANAHORIA. ¿DÓNDE EN LA PORTADA CREES QUE DICE ESO?
10. ¿QUÉ ESTÁ HACIENDO EL NIÑO?
11. **LA SEMILLA DE ZANAHORIA POR RUTH KRAUSS**. Señale “por Ruth Krauss.” ¿QUÉ HIZO RUTH KRAUSS?
12. **DIBUJOS DE CROCKETT JOHNSON**. Señale “Dibujos de Crockett Johnson.” ¿QUÉ HIZO CROCKETT JOHNSON?
13. VOY A LEER EL LIBRO. ¿PUEDES ABRIR EL LIBRO PARA LEERLO?
14. Señale la segunda página; pero no las palabras. **SEÑALA DÓNDE DEBO EMPEZAR A LEER.**

Lea la historia. FIN.

Si ha marcado tres o más cuadrados en la Sección I, continúe con la Sección II; de otra manera pare la prueba aquí.

SECCIÓN II

AHORA VAMOS A VER EL LIBRO DE NUEVO.

9. Abra el libro en la segunda página. **UN NIÑITO SEMBRÓ UNA SEMILLA DE ZANAHORIA. SU MAMÁ LE DIJO, ME TEMO QUE NO CRECERÁ.** ¿PUEDES DECIRME QUE DIJO EL PAPÁ?
10. **SU PAPÁ DIJO, ME TEMO QUE NO CRECERÁ. Y SU HERMANO MAYOR LE DIJO: --SEGURO QUE NO CRECERÁ.** SEÑALA LA PALABRA ‘HERMANO’ EN ESTA PÁGINA.

**11. TODOS LOS DÍAS EL NIÑO ARRANCABA LA MALEZA QUE CRECÍA ALREDEDOR DE LA SEMILLA Y ROCIABA EL SUELO CON AGUA. ENSÉÑAME QUE ARRANCABA DEL SUELO.**

**12. PERO NADA CRECÍA. Y NADA CRECÍA. TODO EL MUNDO LE DECÍA QUE NADA CRECERÍA.**  
¿ALGO VA A CRECER?

Si el niño responde solo “Sí”, entonces pregunte ¿QUÉ VA A CRECER?

**14. PERO TODOS LOS DÍAS ÉL SEGUÍA ARRANCANDO LA MALEZA Y ROCIANDO EL SUELO CON AGUA. Y ENTONCES, UN DÍA...CRECIÓ UNA ZANAHORIA. TAL Y COMO EL NIÑO SABÍA QUE CRECERÍA.**

¿QUÉ TIENE EL NIÑO EN LA CARRETA?

**UNA ZANAHORIA!!!**

Si ha marcado cuatro o más cuadrados en la Sección II, continúe con la Sección III; de otra manera pare la prueba aquí.

### *SECCIÓN III*

**15. AHORA CUÉNTAME LA HISTORIA.**

Dele el libro al niño/a abierto en la segunda página. Deje que el niño/a pase las páginas.

Si el niño/a empieza a leer, entonces diga CUÉNTAME LA HISTORIA PRIMERO Y LUEGO LO LEEMOS.

Si el niño/a repite el texto parcialmente o mayormente continúe con la Sección IV; de otra manera pare la prueba aquí.

#### SECCIÓN IV

16. Pase a la segunda página del libro. ME GUSTARÍA QUE TRATARAS DE LEERME EL LIBRO. EMPEZEMOS AQUÍ. TE AYUDARÉ SI TIENES PROBLEMAS.

Señale cada palabra. Lea la palabra cuando el niño titubea/vacila, tiene dificultad con la palabra o la lee incorrectamente.

Pare al niño después de “Su papá dijo...” si tiene que leerle al niño más de la mitad de las palabras en la página. Examinador acaba de leer el libro.

Pare al niño después de “Todos los días...” si tiene que leerle al niño más de dos palabras por página. Examinador acaba de leer el libro.

¡FIN! ¡ACABAMOS, MUCHAS GRACIAS!

## Appendix C: English Book Task Scoring

### Book Task Scoring

○ is *always* zero points

Code switching is *always* zero points

1. WHERE'S THE FRONT OF THE BOOK?

1 point: Correct

2. CAN YOU SHOW ME WHERE IT SAYS THAT ON THE COVER?

1 point: Points to print not in title

2 points: Points to any word(s) in the title

3. WHAT'S THE BOY DOING?

1 point: Dropping/ planting something, any reasonable answer

2 points: Correct (planting a seed)

4. WHAT DID RUTH KRAUSS DO?

1 point: Wrote/made the book, author

5. WHAT DID CROCKETT JOHNSON DO?

1 point: Drew/made the pictures

6. CAN YOU OPEN THE BOOK FOR ME?

1 point: Turns to first or second page

7. SHOW ME WHERE TO START READING.

1 point: Points to any print on page not beginning of sentence

2 points: Points to beginning of sentence

9. CAN YOU TELL ME WHAT THE BOY'S FATHER SAID?

1 point: Some but not all of the words or correct meaning

2 points: Completely correct

10. SHOW ME WHERE THE WORD 'BROTHER' IS ON THIS PAGE.

1 point: Points to any print (not 'brother')

2 points: Points to the word "brother"

11. SHOW ME WHAT HE PULLED OUT OF THE GROUND.

1 point: Points at the weed

12. IS SOMETHING GOING TO COME UP?

1 point: Plant, flower, tree

2 points: Carrot/carrot seed

14. WHAT DOES THE BOY HAVE IN HIS WHEELBARROW?

1 point: A plant/flower/tree

**2 points: A carrot**

15. NOW YOU TELL ME THE STORY

1 point: Repeats the text of the book: partially correct

**2 points: *Repeats the text of the book: substantially correct***

16. I'D LIKE YOU TO TRY TO READ THIS BOOK FOR ME.

1 point: Child reads to page 3

2 points: Child reads to page 5

3 points: Child reads entire book

Appendix D: Spanish Book Task Scoring

**Prueba del Libro Scoring**

○ es *siempre* cero puntos

“Code switching” es *siempre* cero puntos

15. ¿CUÁL ES EL FRENTE DEL LIBRO?

1 punto: Correcto

16. ¿DÓNDE EN LA PORTADA CREES QUE DICE ESO?

1 punto: Señala una(s) palabra(s) pero no del título

2 puntos: Señala cualquier palabra del título

17. ¿QUÉ ESTÁ HACIENDO EL NIÑO?

1 punto: Tirando/ sembrado algo, cualquier respuesta que sea razonable

**2 punto: Correcto (sembrando/plantando una semilla)**

4. ¿QUÉ HIZO RUTH KRAUSS?

1 punto: Escribió/hizo el libro, autora

5. ¿QUÉ HIZO CROCKETT JOHNSON?

1 punto: Dibujó/hizo los dibujos

6. ¿PUEDES ABRIR EL LIBRO PARA LEERLO?

1 punto: Abre el libro en la primera o segunda página

7. SEÑALA DÓNDE DEBO EMPEZAR A LEER.

1 punto: Señala cualquier palabra en la página (no el principio de la oración)

2 puntos: Señala el principio de la oración

9. ¿PUEDES DECIRME QUE DIJO EL PAPÁ?

**1 punto: Algunas pero no todas las palabras o significado correcto**

2 puntos: Completamente correcto

10. SEÑALA LA PALABRA ‘HERMANO’ EN ESTA PÁGINA.

1 punto: Señala cualquier palabra (no ‘hermano’)

2 puntos: Señala la palabra ‘hermano’

11. ENSÉÑAME QUE ARRANCABA DEL SUELO.

1 punto: Señala la maleza

12. ¿ALGO VA A CRECER?

1 punto: Planta, flor, árbol

2 puntos: Zanahoria/semilla de zanahoria

14. ¿QUÉ TIENE EL NIÑO EN LA CARRETA?

1 punto: Una planta/flor/árbol

2 puntos: Una zanahoria

15. AHORA CUÉNTAME LA HISTORIA.

1 punto: Repite el texto del libro: parcialmente correcto

**2 puntos: Repite el texto del libro: mayormente correcto**

**16. ME GUSTARÍA QUE TRATARAS DE LEERME EL LIBRO.**

**1 punto: Lee el libro hasta la página 3**

**2 puntos: Lee el libro hasta la página 5**

**3 puntos: Lee todo el libro**