A CULTURALLY AND LINGUISTICALLY RESPONSIVE VOCABULARY
APPROACH FOR YOUNG LATINO DUAL LANGUAGE LEARNERS

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ABSTRACT

LUCIA I. MENDEZ: A Culturally and Linguistically Responsive Vocabulary Approach for
Latino Dual Language Learners
(Under the co-direction of Drs. Elizabeth R. Crais and Dina C. Castro)

This dissertation document includes three separate articles that share a single focus:

the development, implementation and assessment of a Culturally and Linguistically

Responsive (CLR) English vocabulary approach for young Latino dual language learners

(DLLs).

The first article reviews and integrates insights from different bodies of existing

literature into a cohesive theoretical framework to inform the development of a CLR

vocabulary approach for young DLLs; the second article reports results of a randomized

study of the CLR approach that contributes to the research literature on theoretically and

evidence based vocabulary approaches to support vocabulary development in Latino

preschool DLLs; and the third article is a translational research article that provides practical

guidance to early childhood professionals wishing to incorporate CLR instructional strategies

into vocabulary approaches for preschool DLLs.

These articles are responsive to the need for further research in the development of

evidence-based vocabulary approaches for this population. Through each article, conclusions

and recommendations are provided to guide the delivery of effective instructional approaches

that meet the unique learning needs of preschool DLLs as well as suggestions for future

research.

ACKNOWLEDGEMENTS

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CHAPTER 1

Introduction

The impact of vocabulary skills on early literacy skills and later reading outcomes is firmly established in the research literature (D. Dickinson & Tabors, 2002; D. K. Dickinson & Smith, 1994). Several research studies reviewed in the National Early Literacy Panel Report (2004) have identified oral language development in general, and vocabulary skills in particular, as significant predictors of later achievement in reading (Cunningham, 1997).

Although this evidence highlights the importance of vocabulary in promoting early literacy skills, many children from low-income families are at risk for delays in vocabulary development, and hence reading difficulties, due to the limited quantity and quality of their oral language input (Pruitt & Oetting, 2009). These documented differences in word knowledge in children from low-income families and a reported vocabulary gap between children who are dual language learners (DLLs) from low-income families and their English monolingual peers further support the impact of socio-economic disparities (Farkas, 2004; Hart, 1995, 2003; Proctor, Carlo, August, & Snow, 2006). It is also widely recognized that vocabulary knowledge in the second language (L2) makes an independent and important contribution to reading comprehension in L2 (Carlisle, Beeman, Davis, & Spharim, 1999) and is a strong predictor of reading outcomes and academic success in DLLs. Thus, many young Latino DLLs from low- income families may be vulnerable to limitations in

vocabulary development in both the first (L1) and second language (L2), reinforcing their at-risk status.

If the reported vocabulary gap between young DLLs and their monolingual peers is not addressed, it could become a precursor to low achievement, negatively impacting academic outcomes. Consequently, there is an urgent need for effective vocabulary approaches, especially at the preschool level, that fully meet the learning needs of DLLs. However, our understanding of evidence-based instructional approaches that can support the unique vocabulary learning needs of diverse children remains limited (Collins, 2005; Ulanoff & Pucci, 1999). In particular, there has been limited research on vocabulary instruction targeting diverse children, as the bulk of research has been on children in upper elementary grades and above (Neuman, 2009). Thus additional research is needed to develop tailored instructional strategies and delivery approaches for effective English vocabulary instruction for this population.

This dissertation responds to these gaps in the research literature through three manuscripts that share a common goal: the development, implementation and assessment of a Culturally and Linguistically Responsive (CLR) English vocabulary approach for young DLLs. The first manuscript, *A Conceptual Framework to Support the Development of Culturally and Linguistically Responsive Approaches to Vocabulary Development in Young Dual Language Learners,* integrates research findings and perspectives from three different bodies of literature into a cohesive theoretical framework that informs the development of culturally and linguistically responsive vocabulary approaches for young DLLs. This manuscript contends that limitations of the traditional English-only educational approaches may contribute to the below-level educational performance of DLLs, especially in L2

vocabulary development. To support this contention, the individual contributions of theoretical models and research findings in the areas of second language acquisition, the word learning dynamics of young DLLs and the cultural and cognitive resources (funds of knowledge) available to children and their families as learning tools are reviewed. This comprehensive, although not exhaustive, review of the literature indicates that due to differences in word learning between monolinguals and DLLs, the cross-linguistic transfer between L1 and L2 (Cummins, 1979; Kroll & Stewart, 1994), and the existence of children's unique funds of knowledge, vocabulary approaches need to be designed to address the resulting differences in learning needs. A discussion of how these research findings can be translated into high quality instructional practices structured for this population is also given.

Three main sets of theoretical and empirical underpinnings that should be considered in designing efficient instructional approaches for children are identified, including: (a) theoretical perspectives on *second language acquisition* (SLA) that support the role of L1 in scaffolding L2 acquisition, especially due to shared cross-linguistic resources between L1 and L2 (Cummins, 1979; Kroll & Stewart, 1994); (b) differences in the *word learning processes* and quality of language input that children who are DLLs receive in the target language; and (c) the socio-cultural perspectives or *funds of knowledge* that view the linguistic and cultural assets of young DLLs, their families and their communities as instructional resources (Moll, 1992).

To illustrate the application of these approaches a Culturally and Linguistically Responsive (CLR) vocabulary approach that promotes English vocabulary development in preschool DLLs was designed to be responsive to this population's learning needs,

combining the instructional strategies derived from each of the conceptual underpinnings

shown in Figure 1.1.

Figure 1.1 Conceptual Underpinnings

CLR Vocabulary Approach

Second Language Acquisition
~Strategic use of concept knowledge from L1

Word Learning Processes
~Explicit/targeted instruction
~Storybook shared readings
~Repeated exposures

Funds of Knowledge
~Use of culturally relevant storybooks
~Use of L1
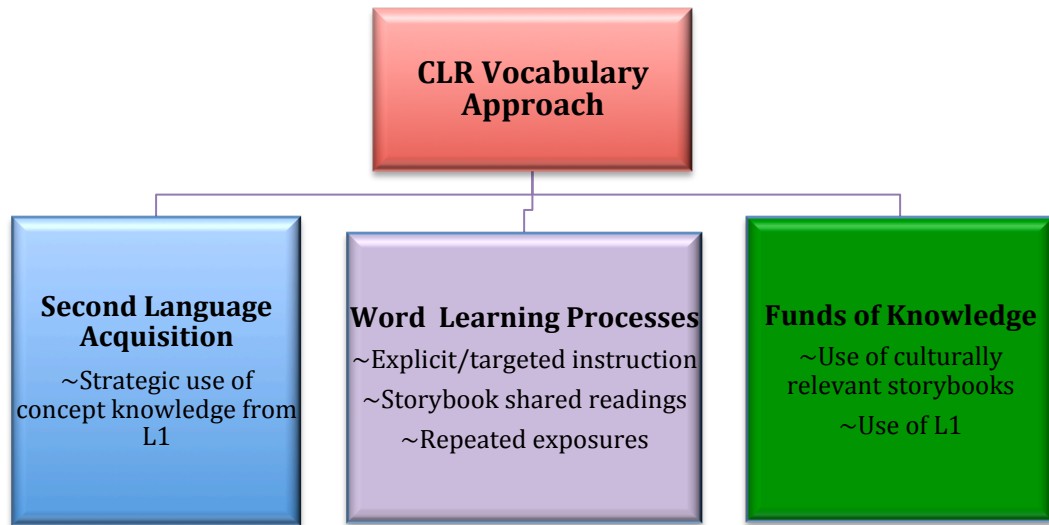
The manuscript concludes by describing practical strategies that could be utilized in

creating culturally and linguistically responsive vocabulary approaches in preschool

classrooms for young Latino DLLs. It is suggested that provision of effective instructional

services for this population requires a departure from the current "one size fits all" L2-only

approach. Instructional approaches for this population, like the CLR approach, could be more

effective if they were based on theoretical and empirical underpinnings, and were designed

not only to meet the unique learning needs, but also to build on the unique strengths of DLLs.

The second manuscript in this dissertation, *A Culturally and Linguistically Responsive*

Vocabulary Approach for Young Latino Dual Language Learners, reports the rationale,

methods, results, and implications of a randomized research study that evaluates the

effectiveness of the CLR vocabulary approach. The study compares the gains and retention of

receptive English vocabulary by Spanish-speaking preschoolers who are DLLs from low-income families after participating in either a Culturally and Linguistically Responsive (CLR) shared reading approach or a contrastive English-Culturally Responsive approach (ECR). The results of this study provide initial evidence of the potential benefits of shared reading using both the child's first language and English in facilitating English vocabulary development in DLLs from low-income families. Future directions for applied clinical research are also discussed as well as interdisciplinary approaches to school-based vocabulary interventions for preschool DLLs.

The third manuscript in this dissertation, *Incorporating Culturally and Linguistically Responsive Instructional Strategies into a Vocabulary Approach for Young Dual Language Learners: A Tutorial,* outlines a set of practical steps that early childhood professionals can follow to use research findings in developing English vocabulary approaches, like the CLR approach, for young DLLs from low-income backgrounds. Research findings on aspects that impact vocabulary acquisition in DLLs are reviewed, and a set of promising vocabulary instructional strategies are presented in the context of a Culturally and Linguistically Responsive (CLR) vocabulary approach designed for low-income Latino preschool DLLs. The CLR approach discussed integrates the strategic use of the home language; culturally relevant content that facilitates activation of prior knowledge; explicit vocabulary instruction; repeated exposures to facilitate the learning of new target words and; multimodal strategies. This manuscript suggests that vocabulary approaches like the CLR that employ selected and targeted instructional strategies may more effectively meet the unique learning needs of children who are DLLs than traditional L-2 only approaches. This tutorial concludes by highlighting some of the potential challenges and benefits of implementing culturally and

linguistically responsive vocabulary approaches for low-income Latino DLLs in preschool settings.

In conclusion, the three manuscripts that constitute this dissertation address gaps in the research literature related to designing evidence-based vocabulary approaches for preschool children who are DLLs. The development of the CLR approach which lies at the core of this dissertation is a first step towards meeting the urgent need for alternate approaches to English vocabulary approaches based on firm theoretical and empirical foundations, while leveraging the cultural and linguistic assets that children who are DLLs bring to their educational experience. These manuscripts describe the steps taken to design, implement and evaluate the effectiveness of the CLR approach in preschool settings with the children for whom this approach was envisioned. The findings from this dissertation could contribute to inform educational policy that builds on the unique strengths, and better meets the educational needs, of these children.

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CHAPTER 2

A Conceptual Framework to Support the Development of Culturally and Linguistically Responsive Approaches to Vocabulary Development in Young Dual Language Learners

Introduction

Latinos are among the largest and fastest growing minority groups in the U.S., accounting for 15.1% of the total U.S. population. Spanish is thus the home language of over 79% of U. S. Dual Language Learners (DLLs), children sequentially learning a second language (L2) while still acquiring their first (L1) (U.S.Census.Bureau, 2008). Twenty-four percent of Latino immigrants live below the poverty level, and fewer than 40% have the equivalent of a high school diploma. The educational needs of these children have raised concerns due to the documented vocabulary gap between DLLs from families of low socio-economic status and their English monolingual peers (August & Hakuta, 1997; Dickinson & Tabors, 2002; Vernon Feagans, Hammer, Miccio, & Manlove, 2002).

Lack of proficiency in the English language, in particular limited vocabulary skills, is often cited as contributing to both the below-grade level educational outcomes of young DLLs from low SES (Moll, 1992; Moll & Gonzales, 1994; Ryan, Casas, Kelly-Vance, Ryalls, & Nero, 2010) and their over-representation in special education programs (Artiles, Rueda, Salazar, & Higareda, 2005; NCCREST, 2009). Whereas children have generally acquired at least 5,000 words before learning to read in L1 (Biemiller & Slonim, 2001), DLLs from low SES who are beginning reading instruction in L2 have much smaller vocabularies in L2 (August, Carlo, Dressler, & Snow, 2005).

A wide discrepancy remains between DLLs and their English-only peers in terms of both the number of words they know (*breadth* of word knowledge) and the different meanings of a given word they know (*depth* of word knowledge), impacting their reading and their academic performance (August et al., 2005).

Despite ongoing attempts to address the educational needs of these young DLLs (August & Hakuta, 1997; Jimenez, 1994), additional work is needed in order to close the vocabulary gap. This paper contends that in many instances the below-level educational performance of DLLs may result from limitations of "traditional English-only" incidental educational approaches. These approaches may not fully meet their learning needs, especially in L2 vocabulary development, and generally do not tap into their cultural and linguistic funds of knowledge (Hancock, 2002; Riojas-Cortez & Bustos Flores, 2009).

The paper also contends that these limitations can be mitigated by instructional approaches more closely tailored to meet their learning needs. This requires taking into account factors that impact vocabulary development in this population, such as the processes of second language acquisition, the word learning dynamics of young DLLs, and the cultural and linguistic resources (funds of knowledge) available to these children and their families as learning tools (Cummins, 2005; Moll & Gonzales, 1994; Nagy & Scott, 2000). Each of these areas has an extensive literature largely independent of the others, with only limited efforts to integrate them into effective instructional approaches for young DLLs.

The purpose of this article is to integrate the insights and perspectives of these different bodies of literature into a conceptual framework upon which instructional vocabulary approaches responsive to the learning needs of these young DLLs can be based. In the first section, theoretical and empirical findings from the three different bodies of

research underpinning this conceptual framework are discussed including: a) processes of second language acquisition, b) the word learning process in DLLs, and, c) the socio-cultural or funds of knowledge perspective. The second section illustrates how these research findings can provide a basis for selecting high quality instructional strategies. The final section illustrates how the resulting strategies are pulled together into a cohesive vocabulary instructional approach for preschool Latino DLLs

Theoretical and Empirical Underpinnings of the Conceptual Framework

In this section some of the theoretical and empirical bases of vocabulary development in young DLLs in the above-mentioned bodies of literature are discussed. A description of how these findings are integrated into a conceptual framework to support the development of instructional vocabulary approaches for this population follows.

Processes of second language acquisition. The processes by which a second language is acquired have been studied for several decades. This work has produced a number of perspectives on the processes underlying second language acquisition: the word association and the concept mediation models (Potter, So, von Eckhardt, & Feldman, 1984), the developmental hypothesis (Kroll & Stewart, 1994), the inter-developmental hypothesis (Cummins, 1979) and the Common Underlying Proficiency Model (Cummins, 1981). While some of these perspectives are based on research with older children and young adult L2 learners, there is evidence to support their relevance to sequential preschool DLLs. Differences between child and adult L2 learners such as cognitive maturity, metalinguistic knowledge and the quantity and quality of input may lead children from different age groups sequentially acquiring L2 and adult L2 learners to follow different developmental paths to acquire L2 (Unsworth, 2004; Unsworth & Blom, 2010). However, cross-group comparisons

suggest that in spite of age differences, L2 learners go through similar developmental stages of L2 acquisition. In particular, in the early stages of L2 acquisition both children and adult L2 learners use what is available to them from L1, suggesting that both groups use similar language mechanisms for L2 acquisition (Unsworth, 2004).

One source of differences in the word learning process between monolinguals and sequential DLLs is the prior existence of a lexical and conceptual system in L1 that interacts with L2 learning (Jiang, 2002). According to the word association and concept mediation models (Potter et al., 1984), words or lexical entries belonging to each language are stored in separate lexical memory systems, but the corresponding concepts or meanings are stored in an abstract memory system common to both languages. The word association model states that during the early stages of SLA, beginning second language learners rely on interdependent conceptual links to L1. This implies that L2 words are mediated via direct connection to their translation equivalents in L1. Under this model, the mapping of L2 forms with existing conceptual entries in L1 relies on L1's lexical level (mental representation of a whole word sound form) to gain access to the conceptual level (mental representation of the characteristics of the referent) as suggested in Figure 2.1. Thus, beginning L2 learners rely heavily on existing knowledge in L1 to gain initial access to the concept knowledge level of L2, highlighting the interconnection of L1 and L2 during the early stages of L2 learning.

Figure 2.1. Word Association Model
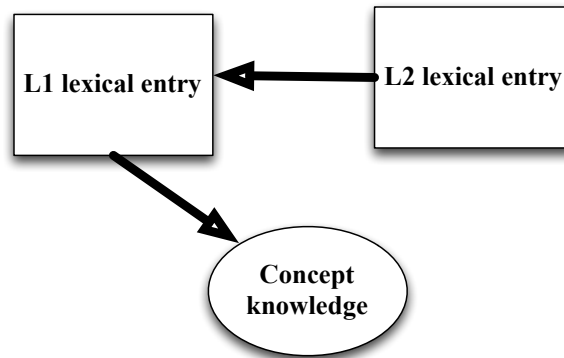
As the DLLs' fluency in L2 increases, L2 words begin to be directly linked to their

meanings (concepts) stored in an abstract memory system common to both languages without

L1 mediation, arguing for a universal inter-language connection that mediates the two

languages as suggested in Figure 2.2. This developmental transition to direct lexical access of

L2 due to increased fluency in L2, resulting in decreased reliance of L2 on L1, is captured by

the *Developmental Hypothesis* of Kroll and Stewart (1994). This hypothesis integrates the

word association and conceptual mediation models into a single model that describes the

evolution of the degree of reliance of L2 on L1 over time as the second language learner

increases fluency. In particular, this hypothesis proposes that once increased fluency in L2 is

achieved, L2 learners will rely less on L1 and will begin to demonstrate independent links in

each language, marking the transition from an interconnected lexical system to the

development of two independent systems.

Figure 2.2 Concept mediation model
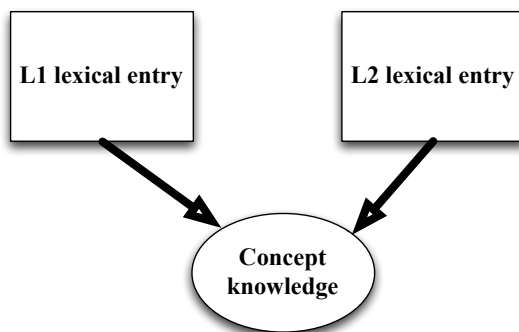
Another influential theory of SLA is Cummins' (1979) developmental

interdependence hypothesis. This theory proposes that the level of L2 competence attained

by a sequential bilingual child is related to the child's level of competence in L1 at the time

intensive exposure to L2 begins, as in the case of DLLs entering an English-only setting. The

second language learner's first language skills scaffold the learning of the second language

unless there is adverse exposure and motivation. Thus, the learning of a new word in L2 for a

concept already existing in the child's L1 requires only learning of a new label (translation).

There is empirical support, although somewhat inconsistent, for a positive

interdependence between L1 and L2 across a number of word learning areas, including

phonological awareness (Dickinson, McCabe, Clark-Chiarelli, & Wolf, 2004; Durgunoglu,

Nagy, & Hancin-Bhatt, 1993). Durgunoglu et al. (1993) studied 31 Spanish-speaking, first-

grade beginning, non-fluent readers in a transitional bilingual educational program to

determine whether the phonological awareness developed through home and school

experiences in a child's L1 (Spanish in this case) was related to word recognition in L2.

Findings suggested that phonological awareness was a significant predictor of performance

on word recognition tests both within and across languages. Both phonological awareness and word recognition skills in Spanish were found to contribute independently to English word and pseudo-word recognition tasks. Children who performed better on Spanish phonological awareness tests were more likely to be able to read English and English-like pseudo-words than those who performed poorly.

Other studies have supported L1-L2 interdependence of vocabulary related skills such as information on the words' core meaning. Lugo-Neris et al. (2010) reported that providing comprehensible vocabulary extensions through the use of L1 appears to scaffold the sharing of conceptual knowledge from L1, benefiting expressive knowledge of L2 target vocabulary. This study examined twenty-two Spanish-speaking children learning English (ages 4–6) randomly assigned to two different types of instruction: word expansions in English or English readings with word expansions in Spanish. Standardized measures of vocabulary skills in both languages revealed that additional vocabulary instruction focused on conceptual knowledge in Spanish resulted in greater growth in the English target words.

Ordoñez et al. (2002) examined evidence of cross-linguistic influence in higher-level vocabulary skills with a group of eighty-eight fourth and fifth grade Spanish-English DLLs who were provided high quality formal definitions in L1 (Spanish in this case). Their findings revealed positive L1-L2 cross-linguistic interdependence of higher order vocabulary skills associated with academic language. Although breadth of vocabulary skills in L1 alone did not predict paradigmatic knowledge (knowledge of how the target word fits into a hierarchical system: part-whole and class inclusion e.g., a robin is a bird that has feathers, beak) in L2, the combined L1 and L2 breadth of vocabulary scores did. The effect of Spanish skills on the paradigmatic task in L2 was reported to be stronger for students with larger

Spanish vocabularies, highlighting the contribution of breadth of L1 vocabulary in predicting L2 performance in these higher-order metalinguistic tasks.

Other research studies have documented a positive cross-linguistic relationship in receptive language and literacy development. Dunn Davison et al. (2011) examined English language and literacy development in 81 preschool-aged bilingual Head Start children in a longitudinal study. They also found a positive cross-linguistic relationship with reading outcomes in first grade as Spanish receptive language skills predicted letter and word identification as well as reading comprehension in English. Hancock (2002) also measured the pre-literacy English skills of seventy-seven Spanish-speaking kindergartners and found that those exposed to the Spanish version of the FRED books scored significantly higher than those receiving English-only readings.

Taken together, these findings suggest that skills underlying language skills in L1 promote growth in L2 (Dunn Davison et al., 2011) for DLLs in early childhood. However, other studies with children in this age range suggest that there are limits to the influence of L1 on L2 acquisition. Collins (2010), for example, examined the effects of rich explanation in L2 on sophisticated vocabulary learning from storybook reading to English language learning (ELL) preschoolers. Rich explanation in L2 and initial L2 vocabulary were found to contribute significantly to sophisticated word learning from storybook reading. However, initial L1 vocabulary knowledge did not influence L2 target vocabulary acquisition.

Similarly, Durán et al. (2010) conducted a longitudinal study comparing lexical measures in Spanish-speaking preschoolers in a Transitional Bilingual Education program to those of a control group receiving English-only instruction. There was a negative correlation between lexical measures of breadth of vocabulary knowledge in L1 and L2, although the

children in this study showed significant growth in oral vocabulary and letter–word identification measures in L1 after a year in a Transitional Bilingual Education classroom. This negative correlation in vocabulary measures led the authors to question the validity of their standardized measures, suggesting caution in interpreting the findings from this study.

Tabors et al. (2003) also found negative correlations between Spanish and English vocabulary using measures of productive vocabulary knowledge for 139 Spanish–English bilingual pre-K children. A confounding factor in this study, according to these authors, was the bilingual environment the children experienced. If the children are in a subtractive bilingual environment where only L2 is supported, as they learn more of the community language (L2) they may begin to lose their language skills in L1. The risk of decreased L1 development for DLLs attending L2–only instruction with no direct L1 instruction has also been reported by Restrepo et al. (2009)

These inconsistent research findings on the breadth of word knowledge suggest that not all aspects of oral language in the L1-L2 cross-linguistic relationship are equally interdependent. In particular, some aspects like phonological awareness, literacy development and higher cognitive vocabulary skills, including conceptual knowledge in L1, may be more influential in supporting the acquisition of L2 skills than others such as breadth of vocabulary knowledge (Durgunoglu et al., 1993; Ordoñez et al., 2002).

This body of apparently inconsistent findings suggest that shared cross-linguistic resources exist as suggested by Cummins (1981) for some important aspects of oral language and literacy development (Riches & Genesee, 2006). Cummins states that in the course of learning L1, children develop an array of cognitive and linguistic skills that can help to scaffold the learning of a second language. Therefore increased language experience in one

language positively impacts the learning of the other and also promotes the continuing development of a cross-linguistic reservoir of abilities available to both languages. This common underlying proficiency of oral language abilities is what supports the learning of L2 (Verhoeven, 2007), as well as skill development in both languages. Thus both languages can thrive given adequate motivation and exposure (additive bilingualism). By the same token, intensive exposure to L2 (without L1 exposure) in the initial grades is likely to hamper the continued development of L1 in children with less developed skills and limited support in L1 (subtractive bilingualism).

The potential existence of shared resources between L1 and L2 highlights the possible role of skills in L1, such as word learning mechanisms, in supporting vocabulary knowledge in L2, especially in the initial stages of L2 acquisition. These findings on the potential existence of shared cross-linguistic resources raise the possibility that word learning skills in L1 may transcend specific languages and facilitate the learning of vocabulary across different languages (semantic bootstrapping). These lexical proficiency skills may be an important component of the common underlying proficiency proposed by Cummins (1981).

In summary, these findings raise the possibility that the lexical proficiency that facilitates word learning skills in L1 may support the learning of vocabulary across different languages. Indeed, Goldenberg (2008) concluded that English vocabulary interventions that use L1 as an instructional vehicle may have long-term benefits and that teaching students emergent and literacy skills in L1 promotes higher levels of reading achievement in English. Therefore the cognitive processes driving the cross-linguistic influence of L1 and L2 need to be understood and considered in the design of optimal instructional approaches to L2 vocabulary acquisition. Having discussed theories of second language acquisition, the second

body of research of interest, examining word learning processes in young children, will now be discussed.

Word learning processes. The learning of new words is an intricate and time-consuming task. Words are learned gradually and the time required to learn them varies depending on their complexity (Nagy & Scott, 2000). Some words like simple nouns can be learned quickly while low–frequency words that we seldom hear often take much longer (Nagy & Scott, 2000). Thus the quality of the word representation young children acquire may vary by how often and in what contexts they are exposed to new words (Childers & Tomasello, 2002).

Research suggests that the initial stages of word learning, or fast-mapping, largely result in the initial learning of a phonetic shape and a word association with a very general meaning of the new word (Kan & Kohnert, 2008). After fast mapping has taken place, vocabulary acquisition proceeds in small steps where many exposures to the word are needed to accumulate a more elaborate knowledge of the various aspects of the word. For DLLs this process may also be impacted by differences in the quality and quantity of input and opportunities for output in their linguistic environments (Bohman, Bedore, Peña, Mendez-Perez, & Gillam, 2010).

Research in neuroscience suggests that rather than mere repetition, what strengthens the neural pathways between form and meaning is the process of retrieving word meaning various times in different contexts (Nation et al. 2007). Consequently exposing children to new words across multiple contexts facilitates the learning of new words more than repeated exposures in a single context. Having between two and six exposures to the new words appears to make a difference in monolingual children, especially when the words are

repeated in a story that is re-read multiple times (Collins, 2010). Similarly for DLLs whose L2 exposure is mostly in the school setting, appropriate levels of L2 word exposure in multiple contexts are needed to support their development of vocabulary skills in L2. Limited word exposure may lead to limited depth of word knowledge (Nash & Snowling, 2007) and incomplete lexical representations of L2 (Ordoñez et al., 2002).

The research literature pertaining to DLLs suggests that different levels of exposure to incidental word learning in different linguistic environments can result in differences in word learning outcomes for DLLs. Verhallen and Schoonen (1998) collected word definition data on 40 monolingual Dutch and 40 bilingual children aged 9 and 11 years from a low-income Turkish minority living in the Netherlands. As a group, the Turkish children exhibited fewer words and less developed depth of word knowledge of the various meanings of the target words than the Dutch children. These differences in vocabulary size were interpreted to be a result of substantial differences in the contexts and frequency of incidental exposure to vocabulary between the groups. Differences in the quality and quantity of incidental input that DLLs receive in different linguistic environments can impact both their depth and breadth of word knowledge and their rate of L2 acquisition (Nation, 2001; Schmitt, 2008; Verhallen & Schoonen, 1998). While these reported differences in word learning outcomes are related to older children, preschool DLLs may be also be impacted as both younger and older children use similar mechanisms for L2 acquisition (Unsworth, 2004).

One of the best ways of learning vocabulary is through a combination of direct and indirect instruction (National Reading Panel, 2000). In direct instruction, the meanings of words are explicitly taught to the children. An example of direct vocabulary instruction is the use of child-friendly definitions that explain the meaning of new words in terms of how they

are used in everyday situations (Beck, McKeown, & Kucan, 2002). Penno et al. (2002) studied 47 monolingual children aged 5-6 years in the beginning stages of learning to read to determine the effect on learning new words when teachers explained the words as they occurred in context. The researchers presented two stories to the children, one with pictorial cues only and the other with pictorial cues and verbal definitions. They found that both repeated exposure to a story and the additive effects of explanation of the meaning of target words contributed significantly to students' oral vocabulary growth. Although gains in vocabulary due to listening to the story with pictorial cues were observed, the group receiving explanations of the target words in context attained greater vocabulary gains.

Research findings on the role of L1 in L2 acquisition also suggest that in early stages of L2 acquisition, the teaching of child friendly definitions scaffolded by L1 concept knowledge could accelerate the process of form-meaning mapping in beginning DLLs, especially given the word knowledge infrastructure in L1 (Nation, 2001; Schmitt, 2008).

One of the primary methods of indirect vocabulary instruction used with preschool children is reading aloud picture books. Research suggests, however, that word learning outcomes can be accelerated when the adult elaborates on the new words in the story and facilitates the children's active participation (Sénéchal, 2006). This interactive method of reading picture books, often called dialogic reading, encourages children to become actively involved in the reading process while the adult listens actively. It provides children with opportunities to participate in the reading of the storybook by repeating phrases, answering questions and manipulation of related props, engaging them as partners in a dialogue advanced by the storybook and the adult (Wasik & Hindman, 2006).

Dialogic reading in preschoolers has been associated with robust vocabulary development in monolinguals (Hargrave & Sénéchal, 2000; Penno et al., 2002). A limited number of research studies of dialogic reading with DLLs also report positive links with the development of word learning (Cohen , Kramer-Vida , & Frye, 2012; Collins, 2010; Roberts, 2008; Valdez-Menchaca & Whitehurst, 1992). Most of the studies with DLLs enlisted the assistance of L1-speaking parents or bilingual teachers to engage in dialogic reading, since the impact of dialogic reading may be decreased by a mismatch between the language of instruction and the child's proficiency in the language of instruction (Cohen et al., 2012; Valdez-Menchaca & Whitehurst, 1992). Therefore the strategic use of the child's first language during book reading can be utilized as an enhancing tool to support learning in DLLs (Gillanders & Castro, 2007; Zepeda, Castro, & Cronin, 2011).

In summary, the learning of new words in both monolingual and bilingual children is a gradual and time-consuming process. Words are learned in stages and the time required to learn words varies depending on the complexity of the word, the context, and the child's initial vocabulary (Nagy & Scott, 2000). The incidental learning of new words during typical classroom activities such as storybook readings is usually facilitated by the context of the story, which becomes a scaffold that helps young children expand their vocabulary (Ulanoff & Pucci, 1999). Combining incidental learning from the story context with contextually relevant direct instruction might be more beneficial than either approach in isolation. Repeated readings of children's books could be further enhanced by the addition of toys and related props (Stahl, 1986; Wasik & Bond, 2001)

However, the empirical evidence related to word learning strategies for preschool DLLs suggests that traditional English-only incidental approaches to vocabulary instruction

may not adequately meet their learning needs (August et al., 2005; Carlo et al., 2004; Ordoñez et al., 2002) as evidenced by the smaller size and limited depth of their L2 vocabulary. Based on the research discussed above, *story reading* combined with other instructional strategies such as *repeated word exposure*, *explicit instruction* and the use of *child friendly definitions* have shown potential for supporting vocabulary development in L2 and helping DLLs build background knowledge upon which they can draw to increase comprehension and depth of L2 vocabulary knowledge (Collins, 2010; Hickman, 2004; Lugo-Neris et al., 2010).   The third body of research underpinning the conceptual framework discussed next is focused on the identification of culturally relevant instructional strategies for word learning in young DLLs.

      Funds of knowledge: a socio-cultural perspective on learning. The research findings reviewed so far suggest that differences in levels of exposure to incidental word learning in different linguistic environments impact word learning outcomes in DLLs. Cummins (1981) also states that the common underlying proficiency across languages can advance L2 oral language development by drawing on this common reservoir of language knowledge. Hence providing children with linguistic contexts that offer rich input connected to their existing knowledge base could support the acquisition of vocabulary in young DLLs. However, current instructional strategies for DLLs are not aligned with these research findings (Hancock, 2002; Ulanoff & Pucci, 1999).

      Approaches to vocabulary instruction for this population in US schools have often been guided by a deficit-based view focused on what the children lack (L2) instead of what they bring to the classroom, i.e., their skills and knowledge in L1 and the ensemble of their cultural experiences (Moll, 1992). This view often assumes that since most DLLs in our schools are from low income families, their social, cultural and linguistic home environments are also limited and therefore have little to contribute to their educational experience (Moll,

1992). In contrast, the viewpoint of funds of knowledge, a socio-cultural perspective on learning, suggests that validating the children's overall life experiences, prior knowledge and previous sociocultural experiences rooted in the lived practices of their households is important for their learning (Gonzales, Moll, & Amanti, 2005). Therefore to reinforce new learning, educational experiences must be related to the students' life experiences including activities and conversations in their immediate home and community surroundings (Gonzales et al., 2005; Maguire & Graves, 2001).

Unfortunately for many DLL preschoolers from low-income families, a disconnect between preschool and home begins the moment they enter the classroom. In the past, many well-intentioned early childhood professionals and related service providers discouraged the use of the children's first language because they felt that this would delay their L2 learning (Ortiz & Ordoñez-Jasis, 2005). This unintended devaluation of the home language may send the message that the community language, English in this case, is the only language that counts in the school world. This, in turn, may result in the internalization that the home language (L1) and everything related to it, including prior knowledge and experiences, have no function or value, and may actually be undesirable, in their school life (Wong-Fillmore, 1991). This disconnect between home and school may impede the child's mastery of new word knowledge rather than reinforcing new word knowledge in different linguistic environments. From a social perspective the child may feel isolated and caught between two different worlds that do not seem to connect or be mutually reinforcing (Orellana & Reynolds, 2008). Sadly, this waste of school and home resources due to a lack of home-school connection may negatively impact on the socio-emotional and educational outcomes of the children (Moll & Gonzales, 1994).

The need to connect the children's world at home to the school environment for better word learning outcomes has been clearly documented (Ortiz & Ordoñez-Jasis, 2005). In her review of the literature, Araujo (2009) proposes the use of *funds of knowledge* as a strategic approach to developing meaningful connections between home and school, thus supporting not only new word knowledge but overall language and school readiness in children who are linguistically diverse.

The concept of funds of knowledge is defined by its main proponent, Luis Moll, as "the essential cultural practices and bodies of knowledge and information that households use to survive, to get ahead, or to thrive" (Moll, 1992). Moll and colleagues studied the dynamics of diverse families and communities through ethnographic interviews (Moll & Gonzales, 1994). They identified a variety of cultural and linguistic resources in family members who could offer a wealth of language knowledge on a wide range of topics ranging from botany to culinary arts. Other community members capable of sharing their world and overall knowledge of mathematics, finance, commerce and storytelling for example were also identified as valuable resources.

Moll's findings reveal that the practical and intellectual knowledge manifested in diverse household and community activities by children, their families, and communities offer rich linguistic environments with ample resources for word learning. These social, cultural and linguistic resources can contribute valuable knowledge and resources for word learning and building strong partnerships between home and schools. Critical to the successful use of these resources, as Moll and his colleagues remark, is willingness on the part of educators and interventionists to adopt a broader perspective that encompasses the use of social, cultural and linguistic resources found outside the constraints of traditional

classroom materials and intervention approaches (Gonzales et al., 2005; Moll, 1992; Moll & Gonzales, 1994).

Other research studies support the effectiveness of instructional approaches that build on the children's funds of knowledge by using culturally related practices and content in L1 to support vocabulary and literacy development as well as socio-emotional growth (Riojas-Cortez, 2001; Riojas-Cortez & Bustos Flores, 2009). Storytelling, which is a rich cultural tradition and a central part of some children's funds of knowledge, has been used to support children's oral language and literacy development. Riojas-Cortez (2009) trained 73 parents of preschool DLLs to use storytelling to promote early language and literacy skills by introducing story elements such as character description, setting, conflict and resolution using cultural content related to their own traditional stories. Parents were encouraged not only to use topics linked to their own cultures such as their own traditional folktales, but also to use their first language and to create their own stories relevant to their families or to provide their own cultural adaptation of classic fairy tales.

The teachers who observed this activity remarked on the children's engagement and the natural manner in which salient story elements including word knowledge were presented. The DLLs' comprehension of the story was naturally scaffolded by the narrator's use of culturally relevant and familiar themes, the first language, repetition, spontaneous questioning, and body language. All of these storytelling strategies in a rich linguistic context have been shown to enhance vocabulary knowledge and early literacy development when used as part of read-alouds with monolinguals and DLLs (Cohen et al., 2012) (Valdez-Menchaca & Whitehurst, 1992). The read-aloud activity, which was further extended into a written activity, revealed the crucial roles that rich sociocultural and linguistic context as

central elements of these children's funds of knowledge can play in supporting DLLs' acquisition of new word knowledge.

Although the type of language-related activities to which DLLs may be exposed at home may not fit the conventional model of vocabulary and literacy-related activities in which mainstream children participate, such as read-alouds in English, the development of vocabulary skills in DLLs can be adequately supported by the funds of knowledge that diverse families offer their children. Araujo (2009) observes that DLLs can be exposed to oral language and literacy in their first language through a variety of home and community related activities, such as being read letters from their relatives or by helping to write shopping, chores and appointment lists in L1. These interactions could promote new world learning opportunities as the household or community members repeat the word in different context (e.g., shopping, looking at family pictures).

The use of language exchanges in the home language related to familiar topics and contexts also facilitates the connection of new concepts to previous personal experiences and the acquisition of new words. The activation of prior knowledge through the connection to previous individual and familiar experiences has been linked to strong vocabulary gains (Dickinson & Smith, 1994; Senechal, 2002). The sociocultural and linguistic environment of these children's funds of knowledge also provides opportunities to expand the breadth and depth of word meaning (Roberts, 2008).

Educators and early interventionists can facilitate literacy acquisition in L2 by building on the previous knowledge in L1, instead of regarding the limited presence of conventional mainstream English literacy activities in the DLLs' home as a disadvantage. Researchers concur that providing culturally relevant literature written in the DLLs' first

language can promote oral language and early literacy skills in both L1 and L2 (Hancock, 2002; Ulanoff & Pucci, 1999).

In summary, the use of cultural and linguistic resources that link new word knowledge to the children's personal experiences promotes strong vocabulary gains (Dickinson & Smith, 1994). These resources could be employed by early childhood professionals to create contextually rich lessons and vocabulary approaches to build new word skills. Furthermore, the use of cultural and linguistic links may also facilitate the home-school connection since home support may be more easily attainable if literacy activities can be incorporated into daily routines or home activities in the first language (Araujo, 2009) .

Putting it all Together: Illustration of an Intervention for Preschoolers

Taken together, the diverse bodies of literature discussed in the previous section inform the potential selection of the following instructional approaches that appear to be relevant in supporting vocabulary development in young DLLs. They include: the *strategic use of the first language, inclusion of culturally relevant content, dialogic-like storybook reading, explicit teaching through the use of child-friendly definitions, and repeated exposures.* Next the integration of these strategies into a coherent vocabulary instructional approach for young DLLs is discussed.

Clearly, there are many different ways in which instructional strategies based on the conceptual underpinnings discussed above might be structured. To illustrate one possible application of these approaches, the author has designed and implemented a Culturally and Linguistically Responsive (CLR) vocabulary approach that promotes English vocabulary development in preschool DLLs (Méndez, 2012). This approach, which is specifically

designed to be responsive to this population's learning needs, combines the instructional

strategies derived from each of the conceptual underpinnings as shown in Figure 2.3.

Figure 2.3 Components of CLR Approach
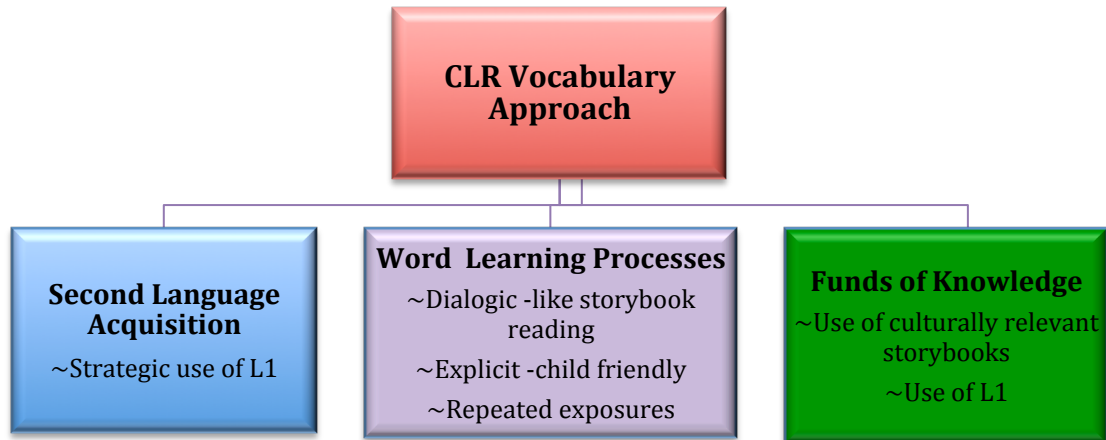
The purpose of the CLR approach is to support the development of English

vocabulary skills in preschool DLLs from low SES backgrounds. It uses the context of

shared readings to teach English vocabulary through explicit instruction in small groups three

times a week for five weeks in a preschool setting. The instructional strategies selected for

this approach include the following:

Strategic use of the first language. This strategy is implemented in the CLR

approach by strategically including L1 as one of the languages of instruction during two of

the three weekly shared book reading sessions. The strategy, derived from the research on

second language acquisition and funds of knowledge, recognizes the potential cognitive

differences in the DLLs' L2 learning due to the prior existence of a lexical and conceptual

system in L1. It builds L2 vocabulary by leveraging the common underlying proficiency

between L1 and L2, while capitalizing on the linguistic dimension of the DLLs' funds of

knowledge to promote the learning of new words in meaningful environmental contexts. This

strategy also facilitates the use of dialogic-like storybook reading with DLLs by providing

DLLs with the means to participate in the dialogue in a familiar language.

Inclusion of culturally relevant content. This strategy is incorporated in the CLR

approach through the use of storybooks with culturally relevant content and the use of L1.

Familiar content could contribute to activate prior knowledge and facilitate connections to

DLLs' individual experiences (Hancock, 2002). Familiar elements help activate children's

background knowledge via making predictions and inferences about the story (Freeman &

Freeman, 2004).

Dialogic-like storybook reading. The format selected to deliver the CLR approach is

dialogic-like storybook reading which provides a naturalistic context for vocabulary

development where the child is an active participant. This context supports the delivery of

both incidental and explicit target vocabulary words contained in the story, and facilitates

vocabulary learning through labeling pictures of the target words in the storybook. Repeated

readings of the storybook also provide multiple exposures to the target words.

Child-friendly definitions. Explicit vocabulary instruction is incorporated in the

CLR approach through the use of child-friendly definitions. This approach is aimed at

teaching the meanings of new words by explaining their typical use through everyday

language e.g., an *illusion* is something that looks like one thing but is really something else

or is not there at all (Beck et al., 2002). Empirical studies provide evidence on the use of

word explanations and definitions to promote vocabulary development with monolingual

children and DLLs.

Repeated exposures. Repeated exposure to target words aids in the consolidation of

word meanings, and helps extract additional layers of information to increase both the

breadth and depth of L2 word knowledge (Brown, 2007; Buysse, Castro, West, & Skinner, 2005; Ordoñez et al., 2002; Penno et al., 2002). Repeated exposures are incorporated in the CLR approach through re-reading the same book 3x/week with related activities including labeling the pictures of the target words in the storybook and introducing each target word five times during different segments of the individual shared readings.

Assessment of the CLR Approach

Once these individual instructional strategies were combined into the CLR vocabulary approach, the effectiveness of this approach in supporting English vocabulary development in DLL preschoolers was examined in a research study (Méndez, 2012). The study compared the gains and retention of receptive English vocabulary by Spanish-speaking preschoolers who are DLLs (from low-income families) after participating in either the CLR vocabulary approach or a contrastive English Culturally Responsive approach (ECR). The ECR approach used the same instructional strategies as the CLR approach except for the use of L1; in the ECR approach all shared reading activities were conducted in L2.

Forty-two Spanish-speaking preschool DLLs were randomly assigned to the CLR group (n=20) or ECR group (n=22) using a comparison group research design. Thirty English target words were presented through explicit instruction in small group shared reading sessions in preschool settings three times a week for five weeks. Gain and retention of the targeted vocabulary were measured during pre-, post- and delayed post-tests. At the end of the study both experimental groups exhibited gains in English receptive vocabulary skills. However, the CLR vocabulary approach yielded greater gains of the target words relative to the ECR comparison group at post-test. Gains in Spanish vocabulary were also observed in the CLR intervention group, at post- and delayed–post-tests but not in the ECR-

comparison group. These findings provide initial evidence of the potential benefits of a vocabulary approach like the CLR approach rooted in the conceptual framework described above in facilitating English vocabulary development in DLLs from low-income families (2012). For more details on the study, see Méndez (2012).

Summary and Conclusions

With the increased numbers of culturally and linguistically diverse students in the U.S., many educational and early childhood settings face the challenges of providing effective instructional approaches for children and families from linguistically diverse backgrounds. This paper suggests that provision of effective instructional services for this population requires not only a departure from the current one size fits all L2-only approach, but also a shift to more culturally and linguistically responsive approaches based on the needs and strengths of DLLs.

This extensive, although clearly not exhaustive, review of the literature suggests that due to differences in: word learning between monolinguals and DLLs, the cross-linguistic relationships between L1 and L2 (Cummins, 1979; Kroll & Stewart, 1994) and the existence of children's unique funds of knowledge, vocabulary instructional approaches must be designed to address the resulting differences in learning needs by incorporating instructional strategies derived from these bodies of literature.

Research in word learning processes suggests that as DLLs begin to learn L2, they may initially benefit more from explicit instruction than from incidental learning alone to promote form-meaning links (Kohnert, Windsor, & Yim, 2006). However, after the first exposure, multiple exposures will likely be needed to consolidate the word meaning and extract the subsequent layers of deep word knowledge. Explicit teaching may provide some

of this word input, but not all the multiple exposures or varied contexts of exposure to the new L2 words needed for the full development of breadth and depth of vocabulary knowledge. Thus additional instructional components such as the use of L1 and culturally relevant content may increase the saliency and redundancy of the contextual information and effectively support the learning of additional aspects of word knowledge in L2. Similarly, repeated exposures to the target words in various situations could also enrich the contextual cues available for DLLs to infer word meanings and bridge comprehension in L2 in the context of incidental learning (Gersten & Geva, 2003).

Findings in the areas of second language acquisition highlight the benefits of building L2 vocabulary on the common underlying linguistic proficiency across languages. The potential benefits of combining the strategic use of L1 to scaffold the explicit instruction of L2 as part of an instructional strategy are well articulated (Farver, Lonigan, & Eppe, 2009; Lugo-Neris et al., 2010; Ulanoff & Pucci, 1999). Finally, English vocabulary instruction for preschool DLLs could also be enhanced by building on the cultural and linguistic skills that DLLs bring to the classroom (Moll, 1992).

In conclusion, failure to recognize the English vocabulary learning needs of preschool DLLs related to the differences in: cognitive processes due to the prior existence of a lexical and conceptual system in L1 (Cummins, 1979; Kroll & Stewart, 1994), quality of language input available in the target language (Verhallen & Schoonen, 1998), the cross-linguistic relationship between L1 and L2, and the existence of linguistic and cultural assets of young DLL and their families (Moll, 1992) may result in vocabulary approaches that do not effectively meet DLLs' learning needs. Therefore effective English vocabulary approaches for this population require a departure from the traditional L2-only approach. These

instructional approaches, like the CLR approach, could be based on theoretical and empirical

underpinnings, and be designed not only to meet the unique learning needs but also to build

on the unique strengths of DLLs.

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Chapter 3

A Culturally and Linguistically Responsive Vocabulary Approach for Young Latino Dual Language Learners

Introduction

The impact of vocabulary skills on early literacy skills and later reading outcomes is firmly established in the research literature (August, Carlo, Dressler, & Snow, 2005; Dickinson & Smith, 1994; Dickinson & Tabors, 2002; Storch & Whitehurst, 2002). Research studies reviewed in the National Early Literacy Panel Report (2004) have identified oral language development in general, and especially vocabulary skills, as strong predictors of later achievement in reading. Expressive and receptive vocabulary, for example, have been consistently and positively associated with reading outcomes through the fourth grade and beyond (Storch & Whitehurst, 2002). Although this evidence highlights the importance of vocabulary in promoting early literacy skills, many children from low-income families are at higher risk for delays in vocabulary development, and hence reading difficulties, due to the limited quantity and quality of their oral language input (Pruitt & Oetting, 2009).

The impact of these socio-economic disparities is also impacting low income dual language learners (DLLs), who are children learning a second language while continuing to develop their first. This is evidenced by the reported vocabulary gap between these DLLs and their English monolingual peers (August et al., 2005; Carlo et al., 2004; Proctor, Carlo, August, & Snow, 2006). This growing body of findings suggests that young Latino DLLs

from low-income families may be vulnerable to limitations in vocabulary development in both their first (L1) and second languages (L2), as indicated by their over-representation in special education programs (Artiles, Rueda, Salazar, & Higareda, 2005; NCCREST, 2009). In addition, many of these children currently receive largely incidental vocabulary instruction in L2 that may not adequately address their unique learning needs, further contributing to the vocabulary gap (August et al., 2005). There is thus an urgent need for effective vocabulary instructional approaches, especially at the preschool level, that meet these children's learning needs (August & Hakuta, 1997; Jimenez, 1994).

Despite this urgent need, our understanding of evidence-based instructional approaches that can support the vocabulary learning needs of diverse children remains limited (Carlo et al., 2004; Collins, 2005; Ulanoff & Pucci, 1999). Additional research is needed to develop specific instructional strategies and deliver related high-quality classroom practices and materials. In response to this need, this research study examines the effectiveness of a Culturally Linguistically Responsive (CLR) vocabulary approach in supporting English vocabulary development in preschool Latino DLLs. This vocabulary approach, which is specifically designed for this population, combines six theoretically and empirically supported vocabulary instructional strategies. Prior to describing the research study, the related research is reviewed.

Effective vocabulary instructional strategies for monolinguals and DLLs

Research on vocabulary acquisition has identified a number of vocabulary instructional strategies that were initially selected to promote vocabulary development in monolingual English-speaking children but have been used with some degree of success with

DLLs. In this section these instructional strategies and their empirical support are briefly reviewed.

Storybook reading as an instructional context. Interactive storybook reading as an instructional context has been identified in a number of studies as an effective vocabulary building strategy for monolingual preschoolers (Beck & McKeown, 2007; Beck, McKeown, & Kucan, 2002; Sénéchal & Cornell, 1993; Whitehurst et al., 1999). During interactive reading children are encouraged to both listen to the story and become actively involved in the reading process. The target vocabulary words are delivered in the context of the story as the adult provides opportunities for the children to participate by repeating phrases, answering questions and manipulating related props. Ultimately the children are engaged as partners in a dialogue advanced by the storybook (Wasik & Hindman, 2006).

Although this approach has proven effective for monolingual children (Hargrave & Sénéchal, 2000; Whitehurst et al., 1994), research findings on word learning in DLLs suggest that reading in L2 only may provide insufficient comprehensible input for DLLs just beginning to acquire L2 (Krashen, 1989). In other words, if a child does not understand most of the content in L2, it will be difficult and time consuming to learn the targeted vocabulary words in L2. Research suggests that interactive reading for young DLLs could be more effective if it is combined with additional strategies such as using the child's first language (August et al., 2005; Hickman, 2004; Lugo-Neris, Wood Jackson, & Goldstein, 2010). Most research studies examining dialogic reading and DLLs incorporate L1 by enlisting the assistance of parents or bilingual teachers to engage in interactive shared reading (Cohen , Kramer-Vida , & Frye, 2012; Tsybina & Ericks-Brophy, 2010).

Child-friendly definitions. Stahl (1986) suggests that incidental learning may not meet the vocabulary learning needs of all children, especially those with a limited vocabulary. Typically developing DLLs with a small vocabulary in L2 may not have ready access to word learning skills in L2 to help them increase both the breadth and the depth of their L2 vocabulary knowledge. Therefore these children may benefit from targeted, explicit vocabulary instruction like the use of child-friendly definitions. Child-friendly definitions facilitate new word learning by explaining the meaning of new words in terms of how they are used in everyday situations (Beck et al., 2002). The benefits of this strategy to expand both monolingual preschoolers and DLLs' vocabulary skills have been documented (Collins, 2005; Hickman, 2004; Penno, Wilkinson, & Moore, 2002).

Multimodal strategies. Supporting explicit vocabulary instruction with redundant sources of vocabulary information has been shown to enhance vocabulary acquisition for both monolinguals and DLLs (Moats, 2001; Prince, 2012). Including different manners of representing and recalling words in different contexts such as the use of visual aids, props, gestures and intentional facial/vocal delivery can supplement and enhance verbal explanations without exclusive reliance on verbal presentations (Gersten & Geva, 2003).

Repeated exposure. Even though young children have tremendous ability to rapidly learn new words, the quality of the word representation they acquire may vary by how often they are exposed to the new word. Multiple encounters with target words in different contexts are needed to acquire a more complete, refined representation of new words (Stahl, 2003). Based on research findings an average of 5-6 word encounters appear to be sufficient for the formation of a stable lexical representation (Collins, 2010). There is also initial

evidence that repeated reading of the same material facilitates the learning of new words by young children (Penno et al., 2002).

Strategic use of L1. This strategy that is specific to DLLs can be used to enhance the effectiveness of the above-mentioned strategies. This strategy is rooted in research findings on second language acquisition and recognizes the differences in L2 word learning between monolinguals and sequential DLLs that are due to the prior existence of a lexical and conceptual system in L1. It also capitalizes on the DLLs' linguistic environment to promote the learning of new words in meaningful contexts by promoting the use of prior L1 knowledge to understand words in L2 (Moll & Gonzales, 1994).

The literature on vocabulary development processes in DLLs suggests that there may be significant gains from strategic use of L1 as a scaffold to L2 acquisition. The Developmental Interdependence Hypothesis of Cummins (1979) suggests that high levels of L1 proficiency are likely to predict high levels of L2 proficiency due to the scaffolding provided by a well-developed word learning framework in L1. This implies that L2 learners may use their word learning skills developed in L1 to learn vocabulary in L2. Cummins (1981) has also proposed the perspective of shared cross-linguistic resources or a common underlying proficiency (CUP). Therefore increased experience in one language positively impacts the learning of the other while also promoting the ongoing development of a cross-linguistic reservoir of language skills that is available to both languages and supports the learning of L2 (Verhoeven, 2007).

Empirical research also supports the importance of L1 in supporting L2 development. The National Literacy Panel on Language-Minority Children and Youth (2006) concluded that English vocabulary approaches that use L1 as an instructional vehicle may have long-

term benefits. Meta-analyses of related studies also concluded that teaching students emergent and literacy skills in L1 promotes higher levels of reading achievement in English (Goldenberg, 2008).

Although some of these findings are based on studies of older children and young adult L2 learners instead of preschool DLLs beginning to learn L2, there is evidence for their applicability to the preschool DLL population. Cross-group comparisons suggest that both child and adult L2 learners may follow similar developmental paths of L2 acquisition. In particular, both children and adult L2 learners in the early stages of L2 acquisition use what is available to them from L1, suggesting that both groups use the same language mechanism for L2 acquisition (Unsworth, 2004). Thus vocabulary approaches that strategically use L1 may provide a promising alternative to the prevalent English-only approach used in many preschools (Jiang, 2002; Kan & Kohnert, 2008; Kroll & Stewart, 1994; Nassaji, 2004; Nation, 2001; Schmitt, 2008). The strategic use of L1 is particularly effective in facilitating interactive shared storybook readings (used in the current study) as it provides DLLs a linguistic resource to not only participate but also to communicate, interact and learn from this vocabulary building activity (Cohen et al., 2012).

Culturally relevant content. Since most DLLs in US schools acquire English vocabulary in an English-only environment, their access to important word learning processes, such as prior knowledge in L1, may be limited. Thus including storybooks and related materials with culturally relevant content that focuses on familiar themes, characters and settings may facilitate the activation of prior knowledge to promote not only new L2 word associations but also learning of multiple meanings for the same words (Hancock, 2002). This strategy can help DLLs build background knowledge upon which they can draw to increase

comprehension and vocabulary retention (Conrad, Gong, Sipp, & Wright, 2004). It also promotes the DLLs' interest and engagement in the elements of the story (Freeman & Freeman, 2004), facilitating their active participation in shared readings.

In summary, these diverse bodies of literature suggest that a vocabulary approach delivered with a naturalistic context such as storybook reading combined with selected instructional strategies such as: *explicit vocabulary instruction*, *repeated exposure,* and *multimodal instruction* and enhanced by*:* a) the *strategic use of the first language,* and b) *culturally relevant content*, has high potential to effectively facilitate English vocabulary acquisition in preschool Latino DLLs.

This research study was designed to explore the effectiveness of an English vocabulary instructional approach incorporating these strategies. The interventions introduced preschool-aged Spanish-speaking DLLs from low-income families to target vocabulary words through shared book reading using either a Culturally and Linguistically Responsive (CLR) vocabulary approach or an English-Culturally Responsive (ECR) vocabulary instructional approach, and was guided by following research questions:

1. *Will the CLR vocabulary approach (compared to the ECR,) promote greater immediate English and Spanish receptive vocabulary gains in preschool-aged Spanish speaking DLLs participating in shared book reading activities?*

2. *Will the CLR vocabulary approach (compared to the ECR) promote greater maintenance of English and Spanish vocabulary gains attained by participants three weeks after completion of the vocabulary instructional approach?*

Method

Participants and Recruitment

The participants were forty-two Spanish-speaking children (16 boys and 26 girls) between the ages of 41 and 60 months (Mean age = 51.8 months, SD = 5.14 months). The children were enrolled in two Central North Carolina Head Start preschool programs with English as the primary language of instruction. The inclusion criteria for all participants were that they: (a) spoke Spanish as their first language and used minimal or no English as reported by their parents; (b) attended an English-only classroom; (c) had a parent who spoke Spanish and (d) had no reported parent or teacher concerns about their overall development including speech and language skills. All study participants were below 6 years of age at the start of the study, and were randomly assigned to either the CLR group (n=20) or the ECR comparison group (n=22) within classrooms at the individual student level.

Caregivers completed a demographic questionnaire adapted from previous research (Hammer, Lopez, & Layzer, 2012) answering questions related to their ethnicity, occupation, education, patterns of home language and literacy use for themselves, their spouses/partners and the children's siblings. Across a wide range of demographic variables (patterns of home language use, maternal education, etc.) there were no significant differences between the experimental groups (See Appendix A). All children in the study were born in the United States and came from homes where Spanish was the predominant language. Seventy-eight percent of the children were of Mexican descent, 10% of Central American, 10% of South American and 2% of Cuban descent. Three quarters of the children in the study lived in households with 2-3 children per family.

Based on the family questionnaire, the children were all DLLs in the process of sequentially learning Spanish and English with dominant use of Spanish at home. Fifty-seven percent of the children began using English at about two years of age, 24% at one year of age, 14% before the first birthday and 2.4% after age 4. Only 33% of the sample had previous preschool experience. Both groups had been exposed to story reading and oral story telling (cuentos/fairytales) in their homes. Higher frequency of storybook reading was reported for the CLR group and increased frequency of oral storytelling for the ECR group (See Appendix A). No developmental or speech and language concerns were reported by parents or teachers for any of the children.

Seventy-six percent of the mothers of the children included in the sample were 26 years old or older; the maternal age ranged from twenty to forty years of age. More than ninety percent of the mothers had lived in US for more than 5 years at the time of the study. Across both groups, about 45% of the mothers reported attending or completing high school compared to about 64% of mothers reported in other Head Start studies (Hulsey, 2011). Twenty percent of the mothers also reported some college education. Mothers were also asked to rate their own Spanish and English receptive and expressive language skills as well as their literacy levels across languages using a 4-point rating scale (1 for very low skill level and 4 for very good or native-like skill). The maternal Spanish and English receptive and expressive language and literacy skills based on parental reporting are given in Appendix A. Again there were no significant differences between groups.

Sixty percent of mothers worked outside the home, compared to 47% of mothers reported in other Head Start mothers (Hulsey, 2011). Among these working Latina mothers 80% held unskilled positions (e.g., food service, machine operators, grounds work) and 20%

semi-skilled positions (e.g., clerks, technicians, sales). Both experimental groups were similar in these variables with no significant differences between groups.

Measures

The measures selected for this study were used to describe the children's oral language levels at baseline and to measure the participants' vocabulary knowledge of the target words before, immediately after, and 3 weeks after the instructional approach.

Standardized measures. To measure the children's overall conceptual vocabulary, the *Expressive One Word Picture Vocabulary Test –Spanish Bilingual Edition* (EOWPVT-SBE) (Brownell, 2000) was administered at baseline. *The Receptive One Word Picture Vocabulary Test* (ROWPVT) (Martin, 2000) and the *Test de Vocabulario en Imágenes Peabody* (TVIP, Hispanoamericana) PPVT (Hispanic-American Adaptation) (Dunn, 1986) were administered at pre- and post-test to measure changes in receptive vocabulary in English and Spanish, respectively.

Researcher-developed instruments. Capturing small changes in oral language after short periods of instruction using available norm-referenced tools is challenging since standard scores of norm-referenced tests are designed to be resistant to the effects of small changes over time (Silverman, 2007a). Consequently, two researcher-developed receptive language probes were used to measure growth in targeted word knowledge after a relatively short period of instruction. These contained a set of 30 English words and their Spanish translations taken from the five storybooks used in the study (six words per book). During pre-instruction training, the children were taught to look at four pictures and point to the one corresponding to the target word said by the researcher, following the general format of the PPVT-4 (e.g., "Show me ___" or "Enséñame"). One of the four pictures was the target (e.g.

ladle) and the other three were semantically related foils (e.g. spatula). The probes were initially used in a pilot study, and a similar probe design was also implemented in a larger study (Nuestros Niños research study). The probes, which are described below, were administered at pre-, post- and delayed post-test by researchers blind to the purpose of the assessment and to the randomization of the participants.

The Receptive English Vocabulary Probe. (REVP) is a criterion-referenced, researcher-developed receptive vocabulary probe containing pictures of 30 non-familiar tier one and tier two English words (Beck et al., 2002). This probe was used to identify each participant's receptive vocabulary knowledge of the English target words. The total number of correct answers was recorded for each student (Appendix B).

The Receptive Spanish Vocabulary Probe. (RSVP) is a criterion-referenced, researcher-developed receptive vocabulary probe that contains pictures of the English words used in the REVP. The tool is administered using the direct translations of the target words in Spanish. The RSVP probe was used to describe the participants' receptive vocabulary knowledge of the Spanish translation labels of the English target words in the same fashion as the REVP.

Procedures

A combination of standardized and researcher-developed measures was used. Pre-test data were collected approximately one week prior to the beginning of the instruction, post-test data within one week of the last shared reading, and delayed post-test data 3 weeks after collection of the post-test data. The ROWPVT and the TVIP were administered only at pre-test and post-test. The two criterion-referenced researcher-developed probes (the REVP and the RSVP) were administered at pre-test, post-test and delayed post-test. The REVP was

used as a screening tool to determine eligibility for participation in the study. The calculated group means and standard deviations for vocabulary skills for both groups are summarized in Table 3.1. All assessments were conducted individually in a quiet room at the children's preschool by researchers blind to the purpose of the assessment.

Training of Interventionists

The bilingual graduate research assistants delivering the intervention received extensive training for both English and Spanish intervention modalities. Each person was provided with an intervention manual and a detailed sample script and instructional kit for each of the storybooks. Each kit contained the book of the week, a list of the target words, the child friendly definitions for that week (in both English and Spanish), associated props, and a listing of the gestures used to indicate the meaning of the target words. The interventionists also watched instructional videos in which the author modeled the delivery of the instructional approach for one of the storybooks, including all of the pre-reading, during-reading and post-reading activities.

Prior to the beginning of the implementation, the author delivered a three-hour training session to all the interventionists during which the training manual was reviewed and instructional videos were presented and discussed. Each week a 30 minute session was held prior to delivering the weekly interactive shared readings in which the storybook to be read that week and its associated props were reviewed with the interventionists. The author also accompanied the interventionists during the first week of the study to provide support and clarification as needed.

Table 3.1: Descriptive statistics for CLR and ECR groups for English and Spanish outcome variables

Outcome Variables	CLR-Approach			ECR-Approach		
	Pre-test M (SD)	Post-test M (SD)	Delayed Post-Test M (SD)	Pre-test M (SD)	Post-test M (SD)	Delayed Post-Test M (SD)
English Language						
REVP	9.90 (2.737)	17.59 (3.187)	16.90 (4.38)	9.27 (3.22)	14.64 (4.67)	15.14 (5.15)
ROWPVT	20.65 (10.05)	27.25 (11.98)	_____	20.23 (8.18)	28.73 (11.27)	_____
Spanish Language						
(RSVP)	14.0 (4.03)	19.65 (5.84)	20.45 (4.21)	15.41 (3.82)	17.45 (4.11)	19.68 (3.96)
TVIP	19.55 (12.84)	19.20 (12.32)	____	19.68 (10.93)	22.32 (10.54)	_____
Bilingual (Span/Eng.)						
(EOWPVT-Bilingual) Conceptual Vocabulary-Bilingual	25.40 (12.06)	_____	_____	33.64 (13.86)	____	_____

Note. *REVP* = Raw score on the Receptive English Vocabulary Probe (researcher developed), ROWPT= Raw scores on the Receptive One Word Picture Vocabulary Test, vocabulary = standard score on the TVIP Peabody Picture Vocabulary Test–III (Dunn & Dunn, 1997); conceptual expressive vocabulary = standard score on the Expressive One Word Picture Vocabulary Test bilingual version (Gardner, 1990); target English vocabulary = raw score on the pretest Receptive English vocabulary probe REVP (Receptive English Vocabulary Probe)

Design

Using an experimental research design, the participants were randomly assigned to either the CLR (n=20) or the ECR comparison group (n=22) within classrooms at the individual student level. Although the participants attended small group sessions according to their assigned experimental condition, the composition of the small groups and the researchers were varied throughout the study to avoid problems with nesting and to minimize the impact of group dynamics and classroom teacher effect.

The Intervention

The children participated in shared reading activities 20 minutes 3x/week for five consecutive weeks (total of 300 minutes) in a quiet room in their preschool centers. The shared readings were conducted in small groups (3-4 children). Both CLR and ECR groups participated in a set of activities surrounding each of the storybooks. A total of thirty English words that included six words from each of the five storybooks were selected as the target words. The researchers conducted the shared group readings adhering to a strict reading protocol to ensure procedural fidelity across sessions and conditions. The author is a native speaker of South American Spanish and the bilingual research assistants were speech-language pathology graduate students trained in the shared readings and the use of reading scripts for each session.

Instructional Approaches

The Culturally and Linguistically Responsive (CLR) approach designed for this study and described above, employed the context of storybook reading along with selected high quality instructional supports proven to be successful in supporting English vocabulary acquisition in DLLs.

The contrastive English-Only Culturally Responsive (ECR) vocabulary approach employed all components of the high quality CLR approach except the strategic use of L1. This contrastive approach provided the opportunity to examine the impact of the linguistic L1 component of the CLR approach within an otherwise similar high quality and culturally responsive vocabulary instruction for preschool DLLs.

Each shared reading activity included the pre-reading, during-reading and post-reading activities described below. The order of activities, frequency and order of books presented

were identical for both CLR and ECR groups. The only difference between experimental groups was the *strategic use of the first language* in the CLR instruction group and not with the ECR group; all activities with the ECR group were in English only.

Pre-reading activities. The story was introduced by looking through the book's illustrations. The first exposure to the target words was completed by labeling pictures of the target words in the story. *Who* and *what* questions were also posed to elicit predictions of story events (e.g., "What do you think the story is about?").

During-reading activities. During the storybook reading the children received three additional exposures to the target words. The researcher read the story using clear diction, emphasizing prosodic contours to highlight emotion and each target word. Natural gestures, facial expressions, pauses and repetition were also used to convey the meaning of the target words. Once the target words were introduced, the children were asked to show their thumbs up each time they heard the target words and to verbally imitate the target words after direct modeling. Child-friendly definitions of the target words were provided in the context of the storybook reading as the words appeared in the text of the story and story-related props were shown to the children (e.g., when defining corn husk, a real corncob covered by corn husks).

After reading activities. The fifth and final exposure to the target words was provided by the researcher reviewing the illustrations while labeling the target words and handing the children the related manipulative props.

For the CLR group only, L1 was strategically used to scaffold the learning of vocabulary in L2 during the first two sessions. As the children became more familiar with the new words, the transition was made to English as follows:

Day 1: Pre-, during- and post-reading activities were delivered in *Spanish* only.

Day 2: Pre-reading activities, during-reading activities, and after-reading activities were all delivered *bilingually* (*Spanish and English*).

Day 3: *Pre-reading activities* were delivered *bilingually*, and *during-reading* and *after-reading* activities in *English.*

Storybooks and Selection of Target Words

The culturally relevant content of the instruction was addressed by selecting five storybooks that: (a) represent themes that authentically reflect the backgrounds of many children who are DLLs, (b) provided direct personal connections to the events of the story, (c) exhibited similarities in the depiction of their stories between the book characters' experiences and that of the DLLs and their families, (d) contained familiar phrases and or places (Freeman & Freeman, 2004), and (e) promoted the use of linguistic and cultural topics for learning (Franquiz & Brochin-Ceballos, 2006). The storybooks, listed in *Appendix B*, also contained: a) narrative text, b) at least six target English vocabulary words unlikely to be known by the children, c) pictorial representations of the target words and, (d) were available in both English and Spanish.

A total of thirty target words, six from each of the five storybooks, were selected for the English-vocabulary word probe list used in the study. The words selected were "tier one" words which include high frequency basic words (e.g., bowl, lamb, brow) and "tier two" words which include medium to high frequency words (e.g., embrace, smear, slicing) that may be beyond the children's current knowledge (Beck et al., 2002). The words selected (verbs and nouns) were also considered important for understanding the story (Appendix B).

Fidelity of Implementation

Sixty-five percent (39/60) of the total 20-minute shared reading sessions were randomly audiotaped to ensure procedural fidelity throughout the study. The audiotapes were reviewed to ensure that the shared reading protocol was followed. Analysis of the instructional fidelity checklist revealed that during each instructional session recorded, the researchers: a) used the appropriate language of instruction (Spanish, bilingual or English-only) 98% of the time, (b) completed the steps in the pre-reading activity (e.g. asked *wh* questions, introduced target words, instructed children to show their thumbs up) 90% of the time, c) completed the steps in the during reading activity (e.g. provided child friendly definitions, elicited word imitations, waited for children to recognize target words) 88% of the time, and (d) presented and repeated the target words according to the reading script 90% of the time.

Data Analysis

To investigate group differences in the children's growth in the targeted receptive vocabulary following the instruction, four dependent variables were measured: scores from the ROWPVT, TVIP and the REVP and RSVP. Descriptive statistics for the four dependent variables were computed. ANCOVAS were conducted to compare scores on the four dependent variables by experimental group using pre-test scores as a covariate.

Results

The purpose of the study was to compare the gains and retention of receptive English vocabulary by Spanish-speaking preschoolers who are DLLs from low-income families after participating in either a Culturally and Linguistically Responsive (CLR) or a contrastive English Culturally Responsive (ECR) shared reading instructional approach. The children's

English and Spanish vocabulary growth was measured. Two dependent variables were used to measure the children's English vocabulary growth of the target words: (a) English target word naming at post-test, and (b) English target word naming at delayed post-test. The children's Spanish vocabulary growth of the target words was also measured by two additional dependent variables: a) Spanish target word naming at post-test and b) Spanish target word naming at delayed-post-test. Statistical analyses were completed to answer the research questions. The results of these analyses are organized based on the research questions outlined in the previous section. As mentioned above, Fisher's exact test (Fisher, 1954) revealed no significant differences between experimental groups on any demographic factor per Appendix A.

1) Immediate English and Spanish receptive vocabulary group gains

Descriptive statistics at pre-test revealed that both experimental groups were not significantly different at the beginning of the study across the standardized and researcher-developed receptive vocabulary measures (Table 3.1). In regards to the immediate *English receptive vocabulary gains*, analyses of the covariates (ANCOVAS) revealed that both experimental groups demonstrated growth in their English vocabulary (Table 3.2). There were significant differences, however, between the CLR and ECR groups in the children's English scores at post-test on the REVP (F (1,39)=4.734, *p*=0.036). Pairwise comparisons revealed that children in the CLR group had significantly higher REVP scores than those in the ECR group (Appendix C). No significant differences between groups were found in the analysis of the ROWPVT at post-test. The treatment effect of the CLR instruction (.70) accounted for a great portion of the variability in vocabulary growth (Cohen, 1988).

Table 3.2 One-way ANCOVA results for dependent variables with covariates at pre-test

	Measures	ANCOVA		***Cohen's effect size	
		Post-test	Delayed Post-Test	CLR vs. ECR	
	English Language			Post-test	Delayed post-test
DV	Receptive English vocabulary probe (REVP)	F (1,39)=4.734 p=0.036**<.05	F(1,39)=.983 p=.327	0.709	.0367
Covariate	REVP at pre-test				
DV	Receptive English vocabulary Test) (ROWPVT)	F(1,39)=.646 p=.426	**	-0.127	**
Covariate	ROWPVT at pre-test				
	Spanish Language				
DV:	Receptive Spanish vocabulary probe (RSVP)	F(1,39)=8.315 p=.006*<.05	F(1,39)=4.48 p=.041*<.05	0.438	0.188
Covariate	RSVP at pre-test				
DV	Receptive Spanish vocabulary test (TVIP)	F(1,39)=2.58 p=.166	**	-0.027	**
Covariate	TVIP at pre-test				

*significant p < .05** not tested, *** calculated using pooled variances

With regard to the *immediate Spanish receptive vocabulary group gains,* descriptive statistics revealed that both experimental groups were similar and not significantly different at the beginning of the instruction across the standardized and researcher-developed receptive vocabulary measures (Table 3.1). ANCOVAs were conducted to compare the scores of each experimental group on the two dependent variables in Spanish, TVIP and RSVP, using pre-test scores as a covariate (Table 3.2). Again, both groups made gains, but there were significant differences between the CLR and ECR groups in the children's Spanish scores at post-test on the criterion referenced researcher-developed Receptive Spanish vocabulary probe (RSVP), F(1,39)=8.315, *p*=.006 (Fig. 3.1).
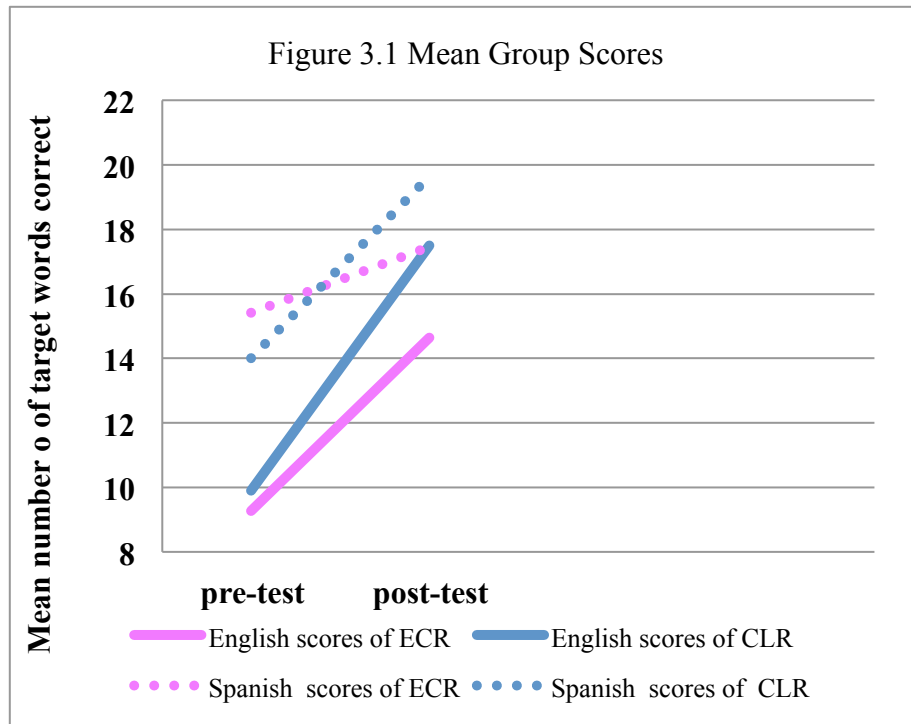
Figure 3.1 Mean Group Scores

Mean number o of target words correct

22
20
18
16
14
12
10
8

pre-test   post-test

—— English scores of ECR   —— English scores of CLR

•••• Spanish scores of ECR   •••• Spanish scores of CLR

Pair-wise comparisons revealed that the children in the CLR group had significantly

higher RSVP scores than the children in the ECR group (Table 3.3). Again as expected, no

significant differences between groups were found in the analyses of the TVIP at post-test.

Table 3.3 Results of Pairwise Comparisons for the Researcher-Developed
Vocabulary Probes

	Measures	**Pairwise Comparisons**			
		CLR - ECR			
		Post Test		**Delayed Post-test**	
	English Language	Mean differences	Sig.	Mean differences	Sig.
DV	Receptive English vocabulary probe (REVP)	2.51*	0.036*	1.396	0.327
	Spanish Language				
DV	Receptive Spanish vocabulary probe (RSVP)	1.181*	0.006*	0.876*	0.041*

*Based on estimated marginal means, the mean difference is significant at the .05 level

2) Maintenance of English vocabulary group gains

ANCOVAs were also conducted to compare scores on the English vocabulary outcome variable by experimental group three weeks following the instruction using pre-test scores as a covariate. There were no significant differences between the CLR and ECR groups for the children's English REVP scores at delayed post-test, $F(1,39)=.983$, $p=.327$. To analyze the *maintenance of Spanish vocabulary group gains*, ANCOVAS were also conducted to compare scores on the Spanish dependent variable at delayed posttest (three weeks following the instruction) by experimental group using pre-test scores as a covariate. There were significant differences between the CLR and ECR groups for the children's Spanish RSVP scores at delayed post-test, $F(1,39)=4.48$, $p=.041$. The two-group comparisons revealed that the children in the CLR group had significantly higher RSVP scores than the children in the ECR group (Table 3.3).

Discussion

The purpose of this study was to compare the gains and retention of receptive English and Spanish vocabulary by Spanish-speaking preschoolers who are DLLs from low-income families after participating in either a Culturally and Linguistically Responsive shared reading approach or a contrastive English-Culturally Responsive approach. Specifically, the study examined whether the CLR vocabulary instructional approach promoted: a) greater English and Spanish receptive vocabulary gains, compared to the ECR approach, in preschool-aged Spanish speaking DLLs from low income backgrounds immediately after participating in shared book reading activities, and, b) greater maintenance of English and Spanish vocabulary gains, compared to the ECR approach, by participants three weeks after completion of the intervention.

Children in both groups made significant gains in both languages and children

receiving the CLR vocabulary approach showed significantly greater gains across both

languages (English and Spanish) from pre-test to post-test relative to their peers in the ECR

group (Figure 3.1). It is important to note that the contrastive English-Only Culturally

Responsive (ECR) vocabulary approach, which was identical to the CLR approach except in

the strategic use of L1 (Spanish), also yielded vocabulary gains. This finding supports the

combined use of culturally relevant shared readings and the other four high quality

instructional strategies employed in the ECR approach to support vocabulary development in

this population.

These findings also suggest that the proposed vocabulary instructional approach

combining six theoretically and empirically supported strategies with the additional

enhancements resulted in greater growth in the CLR children's receptive knowledge of the

target vocabulary words in both English and Spanish than the children in the ECR group.

Since the only difference between the groups was the use of L1, this also indicates

that use of L1 can be an effective instructional strategy for this population. Providing

children in the CLR group with access to information in L2 that can be understood by using

L1 as a scaffold may have contributed to their learning significantly more new English words

(Krashen, 1989). In other words, an environment that provides large amounts of input in L2

may not effectively foster learning of L2 vocabulary if the children cannot understand some

of the information (Krashen, 1989). This finding also potentially supports Cummins (1979)'s

theory on the positive cross-linguistic influence of the word learning framework in L1 as a

scaffold to L2 word learning.

Another benefit of strategically using L1 is that it provided a linguistic context, L1, that promoted verbal dialogue throughout the storybook sessions. As observed by the researchers that delivered the instructional approaches and in the recordings of the interactive readings, the children in the CLR group participated actively in the interactive shared readings by responding to WH questions, pointing and imitating the target words in a similar way to that reported in studies of dialogic reading with monolingual children (Elley, 1989; Sénéchal, 2006; Sénéchal & Cornell, 1993). The participation of the children in the ECR group in the interactive shared readings was observed to be different as they were more quiet, less active and appeared to be more limited by their decreased proficency in the language of instruction, as L2-only was used to deliver the interactive shared readings

The long-term benefits of using L1 to scaffold L2 in the current study should be interpreted cautiously, however, since there was not a statistically significant difference between the groups for the delayed post-test measures. Although both groups retained the number of L2 words they learned after the study, the absence of significant differences between groups three weeks after the completion of the instruction may be related to the dosage of the instruction indicating that the instruction was not long enough, or to the number of words available for the participants to remember (ceiling effect). Perhaps the presentation of more target words would have provided better conditions to evaluate the longer term learning effects of the CLR approach.

Overall, these findings suggest that the CLR intervention promoted greater vocabulary gains in the participating children both in English and in the children's primary language, Spanish, immediately following the instruction. These results support other research findings that children receiving additional instructional scaffolds including the

strategic use of L1 and explicit vocabulary instruction can experience greater gains in English vocabulary than those derived from an English-only approach (Farver, Lonigan, & Eppe, 2009; Lugo-Neris et al., 2010; Perozzi, 1992; Ulanoff & Pucci, 1999). These preliminary findings, if verified in a larger sample, may have policy and classroom practice implications related to the instructional practices for young DLLs.

Limitations

The primary limitation of this study is the small number of participants, which limits the generalization of the results to the larger population of low-income preschool Latino children who are DLLs. The researcher-developed instruments used in the study to measure vocabulary outcomes constitute another limitation because these were not formally validated. However, Pearson product–moment correlation coefficients between the REVP scores and corresponding standardized ROWPVT scores were also computed. Appendix D. gives the correlation coefficients for each test pair, showing a strong positive correlation between the REVP scores at pre-test and post-test and the ROWPVT scores (pre- and post-test). In other words, at each testing time children who scored high on the ROWPVT were also likely to score high on the REVP, and vice-versa, therefore showing some measure of concurrent validity for the REVP.

However, despite the small sample size, these instruments showed significant differences between the groups and there were high correlations of these instruments (REVP and RSVP) with the standardized instruments (ROWPVT &TVIP) at both pre- and post-test. Thus there is considerable support for their use within the current study. Similar researcher-developed measurement tools have also been used in other published work with similar populations (Collins, 2005; Silverman, 2007b).

Future Research Directions

The preliminary findings reported in this paper indicate that CLR instructional approaches warrant further investigation to increase our understanding of evidence-based instructional approaches that effectively support the unique vocabulary learning needs of young DLLs. It would clearly be useful to further explore the benefits of the CLR vocabulary approach with a larger sample size and a control group.

Additional experimental research focused on disaggregating the instructional strategies of the CLR vocabulary approach could increase our understanding of both the individual contribution of each of the six strategies targeted in the CLR instruction and their interactions in yielding positive outcomes. This will permit researchers to examine which components of the instructional approaches and in what combination contributed the most to facilitate L2 vocabulary acquisition in these DLLs. This research focus can help identify which components are minimally necessary to effect learning of new vocabulary words and what is the optimal number of word exposures. This aspect will also provide additional information about the role of the linguistic context of L1 and its synergistic effect on the other instructional strategies. The impact of mutually reinforcing instructional strategies in promoting vocabulary development could also be explored by looking at individual aspects of the vocabulary approach. It will also be useful to examine the role of instructional frequency/dosage and instructional conditions to determine what amount of instruction and what type of classroom climate best support vocabulary development in this population. More studies of this nature need to be conducted to identify what instructional strategies can lead to longer-term advantages in vocabulary acquisition in DLLs.

Additional studies of teacher-led supportive strategies after the end of the instruction could also be useful in determining whether: a) the target words are better maintained through a more intense or longer instruction, or b) through teacher-led periodic exposure to the target words during the three weeks post instruction. Additional knowledge is also needed on how to best support early childhood professionals to meet the vocabulary learning needs of preschool DLLs. Further systematic examination of the multimodal training approach used to train bilingual and monolingual speech-language pathology students who delivered the instructional approach with a high level of fidelity of implementation could also provide insight into professional development approaches to support early childhood professionals serving diverse populations. This insight could also be obtained by examining the transfer of evidence–based approaches to vocabulary instruction like the CLR approach to educators, speech-language pathologists and other early childhood educators.

Implications for Clinical and Classroom Practices

The preliminary findings reported in this study have implications for classroom and clinical practice focused on vocabulary instruction for preschool DLLs. Speech-language pathologists, teachers, and other early childhood professionals could consider incorporating a range of strategies when targeting English vocabulary development in DLLs. These could include: a) *strategic use of the home language,* which may significantly assist English and Spanish vocabulary acquisition in DLLs, b) *culturally relevant content* that facilitates the activation of prior knowledge that may accelerate word associations, c) *explicit vocabulary instruction* since DLLs are likely to benefit more from a focused approach than from incidental teaching alone, d) *repeated exposure* to facilitate the learning of new target words,

e) *multimodal strategies* that effectively supplement and enhance verbal explanations, improving the comprehension of the materials presented, and *f) storybook reading* which is an effective context to promote vocabulary development in young children. The proposed instructional approach provides specific illustrations of how these strategies can be implemented in the preschool classroom.

In conclusion, based on these preliminary findings, CLR instructional approaches appear to warrant further investigation to increase our understanding of evidence-based approaches that effectively support the unique vocabulary learning needs of young DLLs.

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Chapter 4

Incorporating Culturally and Linguistically Responsive Instructional Strategies into a Vocabulary Approach for Young Dual Language Learners: A Tutorial

Introduction

More than 20% of U.S. kindergarteners are from low-income Latino families (U.S. Census, 2004). Many of these children are dual language learners (DLLs) who begin their educational experience while they are in the early stages of acquiring a second language (L2) and still developing their first language (L1). Thus they often enter school with lower L2 vocabulary skills than their English-only peers, resulting in an L2 vocabulary gap (August, Carlo, Dressler, & Snow; Carlo et al., 2004) that affects their reading and educational outcomes in L2 (Moll, 1992; Moll & Gonzales, 1994; Ryan, Casas, Kelly-Vance, Ryalls, & Nero, 2010).

The impact of vocabulary development on early literacy skills and later reading outcomes is also well established in the monolingual research literature (Dickinson & Smith, 1994; Dickinson & Tabors, 2002). Research reviewed by the National Early Literacy Panel Report (2004) identified oral language development, and specifically vocabulary skills, as strong predictors of later achievement in reading. Both expressive and receptive vocabulary are consistently and positively associated with reading outcomes through the fourth grade and beyond (Storch & Whitehurst, 2002). Although fewer studies have examined the relationships between oral language and reading

outcomes of preschool children who are DLLs, researchers also report positive correlations between the children's Spanish and English language skills and reading outcomes (Tabors, Paéz, & Lopez, 2003). Additionally, Hammer, Lawrence, and Miccio (2007) report that growth in either Spanish or English language development in DLLs during the preschool years results in positive reading outcomes in kindergarten. Therefore the relationship between vocabulary and literacy development is particularly relevant for low-income Latino DLLs and increasing their vocabulary skills, especially at the preschool level, could be beneficial to their school readiness.

Engaging these young DLL's from low-income families in activities that effectively support vocabulary development at the preschool level and even earlier would allow speech-language pathologists and other professionals to positively impact these children's academic outcomes. The effective delivery of oral language and vocabulary instruction for at-risk DLLs, however, requires approaches that address the unique needs of this population as well as competent professionals to design and implement them.

Until recently, however, efforts to develop evidence-based vocabulary approaches drawing on the growing body of related research for this population have been limited. Furthermore, related findings have been published in a wide range of journals addressing several distinct bodies of research. Hence an integrated view of these findings and the integrative approaches to vocabulary instruction they imply for classroom and clinical practice is not readily available to clinicians and early education professionals. This is particularly unfortunate since prevalent vocabulary instructional practices in US schools that rely heavily on incidental L2-only vocabulary instruction may not effectively support vocabulary development in DLLs (August & Hakuta, 1997; Jimenez, 1994).

The delivery of effective, high-quality vocabulary instruction approaches for DLLs also requires professionals skilled in working with this population. However, surveys reveal that many early intervention professionals in the United States, such as Speech-Language Pathologists, perceive themselves to be at best only partially competent to address the needs of this population (Campbell & Taylor, 1992). Further, only 5% of Speech-Language Pathologists in the United States are bilingual professionals (ASHA, 2011). Similarly, a national survey of state administrators revealed that the lack of appropriate professional development for early childhood teachers and the limited number of Latino or bilingual educators are the most urgent challenges faced by schools and programs serving Spanish-speaking preschoolers (Buysse, Castro, West, & Skinner, 2005). Given the limited number of professionals who feel prepared to meet the needs of DLLs, it is worthwhile to invest in instructional approaches that will help them to serve this growing population effectively.

The purpose of this article is to provide a tutorial for SLPs and other early childhood professionals concerning instructional strategies that can more effectively support vocabulary development in preschool DLLs. Research findings on aspects that impact vocabulary acquisition in DLLs are reviewed, and a set of promising vocabulary instructional strategies are presented in the context of a Culturally and Linguistically Responsive (CLR) vocabulary approach designed for low-income Latino preschool DLLs. For each of the instructional strategies addressed, the research findings that support its use are pointed out and specific suggestions on how to implement it in a preschool setting are provided. We conclude by highlighting some of the potential challenges and benefits of implementing culturally and linguistically responsive vocabulary approaches for low-income Latino DLLs in preschool settings.

Vocabulary Acquisition in DLLs

The learning of new words is a complex, gradual process that takes place over time. While some new words like simple nouns can be learned quickly, low–frequency words that we seldom hear or words with multiple meanings can require many exposures over a long time for a full understanding to develop (Nagy & Scott, 2000). Thus the quality of the word representation that young children acquire may vary by how often and in what contexts they are exposed to new words (Childers & Tomasello, 2002; Kan & Kohnert, 2008).

One of the differences in the word learning process between monolinguals and sequential DLLs who are in the process of acquiring a second language while still developing their first language, is the prior existence of a lexical and conceptual system in L1 that interacts with L2 learning (Jiang, 2002). Another source of differences is the exposure of DLLs to more than one linguistic environment. In the following section, vocabulary development in sequential DLLs is discussed, specifically: a) the processes that underlie second language acquisition (Cummins, 1981; Kroll & Stewart, 1994) and b) the roles of language input and output due to the existence of more than one linguistic environment (Brojde, Ahmeda, & Colunga, 2012).

Second language vocabulary acquisition. Although some models of second language vocabulary acquisition have been derived from studies of older children and young adults, they can provide useful insights in considering acquisition in younger children. According to Unsworth (2004), research on cross-group comparisons suggests that both children and adult L2 learners in the early stages of L2 acquisition use what is available to them from L1, suggesting that both groups use the same language mechanism for L2 acquisition.

Cummins' (1979) developmental interdependence hypothesis suggests that the level of L2 competence attained by a sequential second language learner is related to the child's level of competence in L1 at the time intensive exposure to L2 begins, which in the case of DLLs is the time they first enter an English-only setting. The second language learner's first language (L1) skills scaffold the learning of the second language (L2) unless there is adverse exposure and motivation. Thus, the learning of a new word in L2 for a concept already existing in the child's L1 may benefit from the word learning infrastructure already developed in L1.

Cummins (1981) has also advanced the notion of shared cross-linguistic resources or a common underlying proficiency (CUP). This author states that in the course of learning L1 children develop an array of cognitive and linguistic skills that can help scaffold the learning of a second language. Therefore increased experience in one language positively impacts the learning of the other while also promoting the continuing development of a cross-linguistic reservoir of language skills that is available to both languages and supports the learning of L2 (Verhoeven, 2007).

There is also considerable empirical evidence of cross-linguistic relationships between L1 and L2 in phonological awareness, literacy and some higher-level lexical skills such as the use of rich definitions showing depth of word knowledge (Dunn Davison, Hammer, & Lawrence, 2011; Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Ordoñez, Carlo, Snow, & McLaughlin, 2002). The National Literacy Panel on Language-Minority Children and Youth (2006) concluded that English vocabulary approaches that use L1 as an instructional vehicle may have long-term benefits. Meta-analyses of related studies conducted by the National Literacy Panel and the Centre on Education, Diversity & Excellence (Genesee, Lindholm-

Leary, Saunders, & Christian, 2006) also concluded that teaching students emergent and literacy skills in L1 promotes higher reading achievement in English (Goldenberg, 2008).

Despite some ongoing debate on the precise nature of the cross-linguistic relationship between L1 and L2 across different aspects of language (Castilla, Restrepo, & Perez-Leroux, 2009; Durán, Roseth, & Hoffman, 2010; Ordoñez et al., 2002; Tabors et al., 2003), the available evidence highlights the potential of skills in L1 for supporting acquisition of L2. Thus the effectiveness of vocabulary instructional strategies for L2 could be enhanced by leveraging skills in L1 as an instructional scaffold (Goldenberg, 2008; Jiang, 2000; Riches & Genesee, 2006; Verhallen & Schoonen, 1998). This instructional alternative is particularly relevant for DLLs receiving classroom instruction in conventional English-only environments (Farver, Lonigan, & Eppe, 2009; Lugo-Neris, Wood Jackson, & Goldstein, 2010).

Differences in Language Input and Output

Interest in participating in social interaction and the ability to extract information from lexically rich conversations are key components of the word learning process in children. However, differences in word learning between monolinguals and DLLs can arise due to the quality of language input (exposure) and output (language usage) that these children experience in their linguistic environments. Children seem to benefit more from linguistic environments that provide rich verbal exposure in conversations characterized by the use of a large number of different words and complex sentences (Hoff, 2003). However, the words that DLLs learn and their mastery of vocabulary use also depend on the opportunities for language usage available to them in each language (Bohman, Bedore, Peña, Mendez-Perez, & Gillam, 2010). The issues related to input will be discussed first, followed by those related to output.

Children with limited initial vocabularies, such as low-income Latino DLLs in the early stages of L2 acquisition, may not benefit as much from their prior knowledge when in L2-only contexts such as classrooms with English-only incidental instruction (Penno, Wilkinson, & Moore, 2002). Contextual clues embedded in L2-only instruction may not be fully effective for beginning DLLs simply because their as yet developing proficiency in L2 does not support complete understanding of these cues in L2. In other words, an environment that provides extensive language exposure in L2 will not necessarily foster effective learning of L2 vocabulary if the children cannot understand the messages (Krashen, 1989). Limited comprehensible input may be of concern for DLLs from low-income backgrounds since it may prevent them from developing the vocabulary and early literacy skills necessary to succeed in future grades (Hancock, 2002; Jiang, 2002; Verhallen & Schoonen, 1998).

The language that DLLs produce in L2 also makes an important contribution to L2 development. Bohman (2010) suggests that producing expressive language (i.e., output) compels DLLs to process language in a way that only hearing it (i.e., input) does not. This finding highlights the importance of providing DLLs with linguistic environments that provide ample opportunities for both vocabulary input and output of expressive language in L2 (Maguire & Graves, 2001).

The use of familiar topics and themes related to DLLs' personal experiences could help them use their prior knowledge to draw inferences about the meaning of new words (Freeman & Freeman, 2004). The children's overall socio-cultural life experiences and the word knowledge derived from the lived practices of the children's households, known as funds of knowledge, are also important aspects of the linguistic environment that assist with learning new words (Gonzales, Moll, & Amanti, 2005; Maguire & Graves, 2001).

Since the resources available in the linguistic environment impact the rate of language and vocabulary acquisition of DLLs (Bohman et al., 2010), not all children who receive early exposure to two languages exhibit the same patterns of language acquisition in both languages. Some DLLs may understand and use both languages, while others may understand both but use only the majority language. Having established the nature of word learning differences between monolinguals and sequential DLLs related to the processes that underlie second language acquisition, and the role of language input and output, the next section elaborates on a set of effective vocabulary instructional strategies for DLLs.

Promising vocabulary strategies for preschool DLLs. Several studies (Collins, 2010; Farver et al., 2009; Silverman, 2007) have reported that DLLs have demonstrated gains in English vocabulary when exposed to a variety of high quality English-only strategies. Prominent among these are small-group shared reading interventions like dialogic reading, the use of child-friendly definitions, repeated exposure to words, and multimodal presentations of words. However, research also reveals that vocabulary outcomes improve even further when these instructional strategies are enhanced and tailored to the needs of DLLs (Lugo-Neris et al., 2010; Méndez, 2012; Proctor, Carlo, August, & Snow, 2006; Ulanoff & Pucci, 1999). DLL-oriented enhancements include the use of culturally relevant content to activate prior knowledge and engage the children in active participation (Cohen , Kramer-Vida , & Frye, 2012; Freeman & Freeman, 2004), and strategic use of the home language to leverage the vocabulary learning framework already existing in L1 (Cummins, 1981; Farver et al., 2009).

To illustrate how these instructional strategies and enhancements can be integrated and delivered in a single unified vocabulary approach, a Culturally and Linguistically Responsive (CLR) Vocabulary Approach for Latino preschool DLLs has been designed. This approach

combines six theoretically and/or empirically supported vocabulary instructional strategies derived from research findings on second language acquisition, word learning strategies, and the sociocultural perspective of funds of knowledge (Méndez, 2012). In the next section a description of the steps taken to design the CLR approach, the selection of the evidence–based components of the CLR approach and how they were implemented in a preschool setting is presented.

A Culturally and Linguistically Responsive (CLR) Vocabulary Approach for Young Latino DLLs

At the heart of an effective CLR approach there are a number of design choices to be considered to ensure effective vocabulary outcomes. An informed decision making process must assure the selection of the best available evidence-based resources. The design choices that were made in developing the current approach focused on selection of: 1) a format for delivering the instructional approach, 2) a linguistically responsive instructional strategy, 3) a culturally relevant instructional strategy, 4) other instructional strategies that best support DLLs' acquisition of new L2 words and, 5) target vocabulary. The next sections discuss these design choices in detail and describe how they were implemented in a preschool setting.

Step 1: **Selection of the format for delivering the vocabulary approach.** Interactive storybook reading was the format of choice because it has been used successfully to build vocabulary in monolinguals (Beck & McKeown, 2007; Beck, McKeown, & Kucan, 2002; Sénéchal & Cornell, 1993; Whitehurst et al., 1999) and is frequently used in preschool settings. This format provides a context in which to teach new words in a connected and meaningful way. The context of the story provides a frame of reference for the particular meaning of the target word that is connected to other words that could help children figure

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out the word meanings. The illustrations of the book also provide additional clues that can clarify and reinforce the meaning of the target word. The children are encouraged to become involved in the interactive reading process while the adult listens actively. Children can be prompted to repeat phrases, answer questions, manipulate related props, ultimately becoming engaged as partners in a dialogue advanced by the storybook (Wasik & Hindman, 2006).

In the CLR approach, the interactive shared readings were conducted in small groups (3-4 children) for 15 minutes three times a week in a quiet room at the children's preschools. The target words were chosen from the text of five storybooks and the same storybook was used over a week; more details of book and word selection are provided later. The children and the professional sat in a semicircle on the floor in a quiet room in the preschool.

The shared readings included three phases of pre-reading, during-reading and after-reading activities described in Table 4.1. In the pre-reading section (about 5 minutes), while pointing at the book cover, the first page and the last page, the children were asked WH questions about the beginning and the end of the story to give them an overall idea about the story and also to help them predict the main topic and the conclusion. For example, the children were asked: "What do you think this story is about?", "What do you think is happening here?" and "How do you think the story is going to end?". If the children did not answer, choice questions with one of the choices being clearly correct were provided. For example, while looking at a picture showing a family making tamales, the interventionist asked "What do you think is happening here? Are they cooking or going to the zoo?". The target words were then introduced by pointing to them and labelling them in the storybook. Before reading the storybooks, the professional asked the children to show their thumbs up each time they heard the target word. During the last interactive shared reading on day 3,

only labelling of the target word was used. The other questions were omitted, as the children were already familiar with the title, author and book illustrator and the prediction questions since the book had already been read in the previous two sessions.

In the during-reading phase of the interactive shared reading (about 10 minutes), after reading each of the pages that contained one of the target words, the interventionist stopped, pointed to the illustration of the target word and asked: "Did you hear one of our special words?" The children were then asked to imitate the target word after direct modelling - "Say it….tongs". This facilitated creation of a phonological representation of the word (Beck et al., 2002). Once the children imitated the target word, the interventionist provided a child-friendly definition, which will be described later. In day 3 of the shared readings, the child-friendly definitions were omitted.

During the after-reading section of the interactive shared readings (about 5 minutes), the pages containing the target words were reviewed. Before reviewing the target words, the children were encouraged to label them: "I wonder who remembers our special words. If you see one, tell me or show me your thumbs up so everyone else can see it". Before labelling the target word, the professional would stop, point, and wait for the children to respond and after getting their attention, label the target word. Immediately after labelling the target word, the children were offered a related prop or were encouraged to imitate the related gestures, which are discussed in more detail below.

Although interactive shared readings approaches have proven effective for monolingual children (Hargrave & Sénéchal, 2000; Whitehurst et al., 1994), research on word learning in DLLs suggests that reading in L2 only may result in a high amount of incomprehensible input for DLLs just beginning to acquire L2 (Krashen, 1989). In order to

facilitate and enhance children's comprehension of the new words and the story, the DLLs'

L1 (Spanish in this case) was strategically used in the CLR interactive shared reading

approach. This facilitated the active participation of the DLLs with limited L2 proficiency.

Table 4.1. Format of Interactive Shared Reading and Vocabulary Instruction

Interactive shared reading activities	Day 1	Day 2	Day 3
Pre reading activities:			
Introduce the book, author, illustrator		Spanish	
Ask WH prediction questions	All in Spanish	Spanish	All in English
Point and label each target word		Spanish & English	
During Reading Activities			
Read the storybook			
While reading target words, pause, look		English	
at children then point to target word	All in Spanish		All in English
Label target word and ask children to imitate		English	
Label target words and provide child-friendly definitions		English & Spanish	
Show prop or related gestures			
After Reading Activities			
Point to the picture of target word in book		Spanish	
Encourage children to label/show thumbs up		Spanish	
Label target word	All in Spanish	English & Spanish	All in English
Provide prop for children to manipulate or invite them to imitate gesture		Spanish	

Step 2: Selection of the linguistically responsive instructional strategy. The

strategic use of L1 was selected because it takes advantage of the language skills developed in

the children's first language. This instructional strategy is derived from research findings on

second language acquisition that recognizes that DLLs can employ the knowledge acquired in

L1 as a resource in the learning of L2 (Cummins, 1981). This instructional strategy also

facilitates interactive shared readings of storybooks by permitting DLLs to *actively*

participate in the dialogue in a language in which they are comfortable communicating (Cohen et al., 2012). Research findings reveal that when instructional vocabulary are enhanced and tailored to the needs of DLLs strategies (see list of instructional strategies of the CLR approach on Table 4.2), the outcomes improve even further (Burchinal, Field, López, Howes, & Pianta, 2012; Lugo-Neris et al., 2010; Méndez, 2012; Proctor et al., 2006; Ulanoff & Pucci, 1999). A growing number of studies have reported the positive cross-linguistic relationship of L1and L2 in different aspects of language including literacy, concept development (Dunn Davison et al., 2011; Hammer et al., 2007; Sandoval-Martínez, 1982).

In the CLR approach this instructional strategy was implemented through the strategic use of L1, Spanish in this case, over two days of interactive shared readings. In day one of the interactive shared readings, all of the activities including pre reading, during reading and after reading are completed in L1 (Table 4.1). The target word concept in L1 (Spanish translation of the target word in L2) was strategically used in day 1 of the CLR approach prior to the presentation of the target word in L2. This usage of L1 was intended to help activate the DLLs' prior knowledge or associated word knowledge in L1. This strategy may enhance the learning of new word meanings by building connections with previous personal experiences and familiar knowledge and presenting all the contextual cues embedded in the story reading in L1 (Freeman & Freeman, 2004).

On day 2, the target words were presented in both languages during all three phases of the interactive shared reading. In the before-reading activities the target words were presented in L1 first immediately followed by the English translation, e.g. "**pinzas** en ingles se llaman **tongs**" ("Pinzas are called tongs in English"). In the during-reading phase, the story was read in English. The target words were then presented in English followed by the Spanish

translation just before the child-friendly definition in Spanish. On day 2, L2 was presented as

a translation of L1 in order to facilitate the L1-L2 cross-linguistic link. Since beginning

second language learners rely on interdependent conceptual links to L1 (Potter, So, von

Eckhardt, & Feldman, 1984) the joint presentation of the target words in both languages

makes use of this mediation process. As the proficiency of L2 continues to progress, meaning

can be accessed more directly for L2 (Potter et al., 1984).

Table 4.2. Instructional Strategies of the CLR Approach

Instructional Strategy	Description	Purpose	References
Strategic use of L1	Use of DLLs' first language	To build on the children's pre-existing language knowledge in L1	(Cummins, 1979; Farver et al., 2009; Krashen, 1989; Ulanoff & Pucci, 1999)
Relevant cultural content	Use of culturally relevant instructional materials including books	To assist the child in making connections between the new word and previous knowledge and familiar experiences	(Freeman & Freeman, 2004; Moll & Gonzales, 1994; Roberts, 2008)
Child Friendly Definitions	Explain the meaning of new words by describing them by how they are used in everyday situations	To assist with comprehension of the new word meaning	(Beck & McKeown, 2007; Penno et al., 2002)
Repeated Exposures	Provide repeated exposures to target words in new contexts, environments	To provide opportunities to access word meanings in different context/situations	(Collins, 2010; Elley, 1989; Stahl, 2003)
Multimodal Presentations	Includes use of labelling, verbal comments, visual body language modalities including the use of realistic props and related gestures to point to or illustrate target words	To provide many multimodal cues to help describe and explain the meaning of the new word	(Gersten & Geva, 2003; Silverman, 2007; Wasik & Bond, 2001)

To support this progression toward directly linking L2 words to their meanings

(concepts) without L1 mediation, on day 3 the interactive shared readings were conducted in

L2 only. The combination of interactive shared readings and the use of L1 are mutually reinforcing enabling DLLs to actively participate in the interactive shared readings.

Step 3: Selection of the culturally relevant instructional strategy. This enhancement to vocabulary instructional strategies was selected because it uses the DLL's unique cultural knowledge as an instructional tool to build new L2 knowledge (Moll, 1992). The use of familiar content contributes to L2 vocabulary acquisition by activating prior knowledge and facilitating connections to DLLs' individual experiences (Hancock, 2002). Helping children who are DLLs access background knowledge upon which they can draw to increase comprehension is likely to result in increased concept knowledge and vocabulary retention in both L1 and L2 (Conrad, et al., 2004). This approach was incorporated in the CLR approach through the use of L1 and storybooks with culturally relevant content.

Storybooks with familiar themes can help children who are DLLs make connections to their individual experiences (Hancock, 2002). Activation of prior knowledge facilitates categorical word learning by making the categories more meaningful to the learner. Categories whose features/words are interconnected by prior knowledge fit more easily with children's common knowledge than words that do not have pre-existing links (Ziori, 2008). When DLLs acquire English vocabulary in an English-only environment, their use of important word learning skills such as prior knowledge and past experiences in L1, which help build word associations and understanding of new words in L2, may be diminished. Additionally, Kim (2011) reported that DLLs beginning to learn L2 preferred culturally relevant texts to non-culturally relevant ones. Thus young DLLs may be more attentive with the use of culturally relevant materials.

The culturally relevant storybooks used in the intervention were selected because they represent themes that authentically reflect the backgrounds of many children who are DLLs. The topics and stories used also present a familiar knowledge base for DLLs to build upon and relate to while promoting the use of linguistic and cultural topics for learning (Franquiz & Brochin-Ceballos, 2006; Rodríguez, 2009). Familiar elements are important in activating the children's background knowledge since it helps in making predictions and inferences about the story (Freeman & Freeman, 2004). This facilitates DLLs engagement in the elements of the story, allowing them to become active participants in shared reading in a manner similar to that advocated by dialogic reading (Whitehurst et al., 1994), which has been proven successful with monolinguals. The bilingual nature of the intervention also required that the storybooks be available in both English and Spanish (Table 4.3). In selecting books, the author made sure the books contained: a) narrative text, b) pictorial representations of target words and, c) at least six target English vocabulary words unlikely to be known by young DLLs.

In the CLR approach the cultural content was implemented throughout the use of culturally relevant books during the pre-, during- and after-reading activities in the 3 days of interactive shared readings. During the pre- and post-reading phases the illustrations of the books were used to label the target words. The culturally relevant content depicted in the stories was reinforced by the use of related familiar props to demonstrate the meaning of the words (e.g., cornhusks, piñata stick, rolling of a tortilla).

Step 4: Selection of the other vocabulary instructional strategies. Three additional instructional strategies that could be easily delivered within the context of storybook readings were selected: use of child-friendly definitions, repeated exposure to words, and multimodal

presentations of words. A review of the literature revealed that the selected instructional strategies have rendered successful vocabulary outcomes for monolingual preschoolers but have also been successful for DLLs, even when delivered only in L2 (Collins, 2010; Farver et al., 2009; Silverman, 2007). These instructional strategies are now discussed in detail.

Child-friendly definitions. This instructional strategy was selected because it explicitly clarifies the meaning of words in the context of the story and fits easily within the reading of the target words during the interactive shared readings. According to research, one of the best ways of learning vocabulary is through direct and indirect instruction (2000). In direct instruction, the meanings of words are explicitly taught to the children. The use of child-friendly definitions is an example of direct instruction that explicitly teaches the meaning of a new word by explaining in everyday language how it is typically used e.g., "*Exhausted* means feeling so tired that you can hardly move" (Beck et al., 2002). This strategy provided the children with a definition of the word in the context of the story.

Empirical studies provide evidence for the use of word explanations and definitions to promote vocabulary development with monolingual children and DLLs. For example, Collins (2011) examined the effect of rich definitions in a small group shared reading intervention with young preschool Portuguese DLLs. Her findings revealed that although receptive L2 language level and home reading frequency contributed significantly to the target word learning, rich explanation was the strongest contributor. Similarly, Penno et al. (2002) studied 47 children aged 5-6 years in the beginning stages of learning to read to determine the effect of teacher explanation on the learning of target words as they occurred in context. The researchers presented two stories to the children, one with pictorial cues and verbal definitions and the other without verbal definitions. They found that both repeated exposure

to a story and the additive effects of explanation of the meaning of target words contributed significantly to students' vocabulary growth. Although gains in vocabulary due to listening to the story were observed, the group receiving additional explanations of the target words in context attained greater vocabulary gains.

Table 4.3. Examples of Culturally Relevant Content, Child-Friendly Definitions, Props, and Gestures

Story Book	Targeted Vocabulary	Child friendly definitions	Props	Gestures
Growing up withTamales/Los tamales de Ana by Gwendolyn Zepeda	Cornhusks *hojas de maiz*	Are the green parts outside of the corncob	Corncob with leaves	Show the cornhusk and imitate shucking it by pretending to peel away the husk with the fingers of your right hand
	Tongs *pinzas*	Are what we use instead of our fingers to pick up or hold things	Tongs	Pick something up with the tongs
	Smear *untar*	Is to stretch something over like glue on a piece of paper	Glue, paper & stick	Spread glue on a piece of paper with a stick
	Handlebars *manubrio*	Are the parts of the bicycle that you hold on with your hands to ride	Use gesture	Pretend to hold the handlebars of a bike and move from side to side
	Apron *mandil*	Is something we put on over our clothes to keep them clean	Apron	Put on the apron
	Steer *manejar*	Is to make a car go the way you want to	Use gesture	Pretend to hold a steering wheel with both of your hands and steer

Even though there is limited research with DLLs in this area, research findings on the role of L1 in L2 acquisition suggest that in early stages of L2 acquisition, presenting word input such as child-friendly definitions in L1 could potentially accelerate the process of form-meaning mapping in L1 (Nation, 2001; Schmitt, 2008). Thus combining the delivery of child-friendly definitions with L1 may promote the linguistic interaction between languages

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that may allow the word learning mechanisms in L1 to scaffold L2 vocabulary learning.

Repeated word exposures. This instructional strategy was selected since research suggests that the learning of new words is impacted by the number and type of exposures that a child has that provide meaningful information about the new words (Stahl, 1986). When children encounter words, they extract partial information requiring multiple encounters with the words to learn the various word meanings (Stahl, 2003). Not all words, however, are quickly understood; some words with multiple meanings or those that are low frequency require several exposures and different contexts to progressively understand their various meanings (Stahl, 2003). Thus a vocabulary approach that provides opportunities for multiple exposures to words, preferably in different contexts, could positively impact vocabulary learning.

As mentioned above, multiple exposures in different contexts are especially important for DLLs who are receiving a large portion of their L2 exposure in an incidental manner at school (Kan & Kohnert, 2008; Verhallen & Schoonen, 1993). Repeated reading of the same material has also been shown to facilitate learning new words by young children of diverse backgrounds (Penno et al., 2002). Studies with DLLs also reported robust vocabulary growth during storybook reading after six exposures to the target words in L2 (Collins, 2010).

In the CLR approach, repeated exposure to the target words was implemented by reading the same bilingual book on three consecutive days so the children encountered the target words five times in different phases of each of the interactive shared readings. The target words were presented to the children during different contexts in the pre-reading, during-reading and after-reading activities of each shared reading session.

The first exposure to the target words was completed via labelling of the pictures of the target words in the story during the pre-reading phase (i.e., showing and labelling the picture of the targeted vocabulary word in the storybook's illustrations). In the during-reading phase the children received three additional exposures to the target words as follows: 1) first, during reading the target word in the context of the story; 2) when the professional modelled the target word by asking the children to imitate her saying the target word: "Did you hear our special word? Say it after me…."; 3) during the child-friendly definition simultaneously delivered by showing a realistic prop or related gesture and, 5) in the after-reading phase by labelling the target words again after pointing at the appropriate book illustration and handing the children the related props.

Overall, the children had 5 opportunities to hear each target word across each interactive shared reading session and a total of 15 opportunities at the end of the three days of interactive shared reading per week. To ensure that the intended number of word repetitions was presented, a script was developed and attached to the books to be followed during the interactive shared readings.

Multimodal word representations. The final instructional strategy selected for developing vocabulary in children who are DLLs was the use of multimodal word representations. This strategy was selected because including different manners of representing words, such as the use of props, gestures and intentional facial/vocal delivery may enhance verbal explanations while avoiding exclusive reliance on verbal presentations (Gersten & Geva, 2003).

Multimodal presentations of the target words were also selected because they reinforce other instructional vocabulary strategies used in the CLR approach. For example,

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using different props and gestures constitutes a form of repeated exposure to clarify the meaning of the target words. Showing the realistic props or using gestures while providing child-friendly definitions is also a way of acting the words out or bringing the word meanings to life. The use of realistic props (e.g. cornhusk leaves, piñata stick, rolling pin) with which the children were familiar in their daily lives brought in content from their home culture. Activating the children's prior knowledge and making personal connections with their previous experiences in this manner supported the learning of new word forms and meanings.

Multimodal L2 word presentations may also increase the saliency and redundancy of contextual information, enhancing incidental learning and the effectiveness of storybook reading for young Latino DLLs (Ordoñez et al., 2002). These redundant modalities such as verbal, visual, tactile, etc. could aid the processing of the word meaning and the recall of the words (Prince, 2012). Wasik et al. 2001) found that the effectiveness of storybook reading was increased by the addition of props related to the target words.

Within the CLR approach, multimodal word representations were implemented throughout all of phases of the shared readings. This strategy was used to emphasize, highlight and convey meaning of the explicit target words through the different modalities. During the reading of the stories, the professional used clear diction, emphasizing prosodic contours to highlight each one of the target words. Natural gestures, facial expressions, pauses and repetition were also used to direct attention to the target word and provide clues about the words meanings. The props also increased the children's interest and engagement in the story and the related activities. In the after-reading activities the children had an opportunity to manipulate and touch the realistic props and when no props were used (for words such as "embraces") they were invited to imitate a related gesture. A partial list of

definitions and accompanying props/gestures used in the CLR approach is listed in Table 4.3.

      Step 5:Targeting and selecting key vocabulary. Targeted vocabulary as an instructional strategy is an important component of a vocabulary instructional approach. For the CLR approach, the words selected were important to understanding the story, represented different parts of speech (e.g., nouns and verbs), and were unknown to the participants. To ensure the words were appropriate for DLLs, we included "tier one" words (basic words) that include high frequency basic words (e.g., bowl, lamb, brow). Although many monolingual children may know tier 1 words in L1, some DLLs may know the concept but not the label in L2, which may impact their understanding of the story. Tier 2 words medium to high frequency words that children may not know (e.g., smear embrace, blending) and may be beyond their current knowledge, were also included (Beck et al., 2002).

      To obtain a manageable number of instructional target words, six English target words were selected from each of the five storybooks (30 words overall). The target words selected were also appropriate versions of the Mexican variety of Spanish as pre-determined by a native speaker. One of the books used in the CLR approach along with the English target words and their Spanish translations is included in Table 4.3.

Summary

      This review of the current state of knowledge on word learning strategies that support L2 vocabulary acquisition in low-income preschool DLLs reveals a number of evidence-based instructional strategies, such as interactive shared readings, strategic use of L1, child-friendly definitions, repeated exposures, culturally relevant content, and multimodal word presentations that can make important contributions to word learning in DLLs. It was also illustrated how these instructional strategies can be integrated and delivered as a cohesive

vocabulary approach in a preschool setting by describing the basis and implementation of the CLR vocabulary approach developed by the author. For further detail on the effectiveness of the CLR approach see Méndez (2012).

Implications for Supporting Vocabulary Acquisition in Preschool DLLs

Foremost among these implications (and repeatedly demonstrated in the literature) is the critical need for effective vocabulary instruction for this population, especially given the importance of the preschool years in building language and literacy skills for later outcomes (Manyak & Bouchereau Bauer, 2009). The review suggests several issues to be considered in planning and developing vocabulary building strategies for this population.

1. A vocabulary instructional approach tailored for low-income preschool DLLs should include a combination of instructional strategies that both a) acknowledge and address the differences in vocabulary acquisition between monolingual and sequential DLLs (second language acquisition processes) and, b) build on the cultural and linguistic funds of knowledge these children bring to the classroom.

2. Providing these children with instructional support from L1 may result in the scaffolding of new L2 word knowledge onto their existing L1 language-learning framework. Thus the strategic use of the home language may significantly assist English and Spanish vocabulary acquisition in DLLs. My own research reveals greater English word vocabulary gains in Latino preschoolers from low income families after exposure to the CLR vocabulary approach that included the use of L1 compared to a contrastive vocabulary approach that did not (Méndez, 2012).

3. Based on research findings, exposing preschool DLLs to vocabulary approaches that combine a set of mutually reinforcing instructional strategies is central to efficient and

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effective L2 vocabulary acquisition.

4. A good starting point in developing effective vocabulary approaches for this population is to build on vocabulary approaches that have proven successful for monolingual pre-schoolers including: shared readings, child-friendly definitions, repeated word exposures and multimodal instruction. In order to maximize their effectiveness for preschool DLLs, they also need to be enhanced with additional instructional strategies rooted in our understanding of the processes of second language acquisition and the children's funds of knowledge. Strategically including the DLLs' L1 as well as culturally relevant content through the selection of the storybooks, visual props and gestures may yield a more effective vocabulary approach.

Challenges

Even though vocabulary approaches such as the one described above have the potential to accelerate L2 vocabulary acquisition in DLLs from low-income families, it is important to also acknowledge the challenges to their implementation. One of the challenges for SLPs, teachers and other early childhood professionals in implementing this type of small group vocabulary approach is the time it demands from these already overworked professionals. This can be alleviated to some extent if SLPs and early childhood professionals can join forces with other colleagues who share a similar caseload to plan and develop related lesson plans and intervention/classroom materials as a team. They can also set up a reading group for professional education credits and examine the research literature for suitable instructional strategies to incorporate in their joint materials. Hopefully, this tutorial is a starting point for professionals starting to focus on these areas.

The lack of commercially available materials for DLLs renders this difficulty even more acute. However, as our knowledge of this population's educational needs continues to expand, it is likely that the selection of culturally relevant books and supporting instructional materials and props will grow. The growing number of young DLLs in our school systems creates a substantial market for commercial products to support early childhood professionals working with this population. This may require planning ahead so that some budget for materials can be allocated to this area of service delivery. Researching the local library for resources (books, audiotapes, internet, etc.) may also be an option. In addition, some families may have culturally relevant storybooks they are willing to share with professionals for use in the classroom.

Enhancement of these instructional strategies to incorporate elements of the home language and culture is naturally challenging for SLPs and early childhood professionals who do not speak the DLLs' language. The funds of knowledge perspective suggests that enlisting the support of family and home community members may help in this effort. Research into the availability of interpreters or other community volunteers, such as college students who are language majors, may also assist with this aspect. There are also audiobooks with narrations in different languages that could also be used if no other options are available. It is important to keep in mind, however, that even if there is no one available to assist with L1 language input, the use of L1 is only one of the enhancing strategies discussed here. If use of L1 is not a viable option, the other five instructional strategies are still available to promote effective L2 vocabulary instruction as demonstrated by previous research studies including Méndez (2012).

Despite these challenges, however, over 20% of the US children entering kindergarten are DLLs from low-income families. This growing number of Latino DLLs makes the need to provide them with the instructional tools to ensure their academic success an urgent one. By providing them with effective instructional vocabulary approaches, we can help lay the foundation for their future academic success and for their ability to benefit from their civil right of access to a free and appropriate education.

Summary of Demographic Variables

	Overall (N = 42)	CLR (N = 20)	ECR (N = 22)	P value †
Language of interaction at home				
Mother to child, n (%)				
More Spanish than English	36 (85.7)	17 (85.0)	19 (86.4)	
Equal Spanish and English	3 (7.1)	2 (10.0)	1 (4.6)	0.7977
More English than Spanish	2 (4.8)	1 (5.0)	1 (4.6)	
Other/NA *	1 (2.4)	0 (0.0)	1 (4.6)	
Child to mother, n (%)				
More Spanish than English	35 (83.3)	18 (90.0)	17 (77.3)	
Equal Spanish and English	4 (9.5)	2 (10.0)	2 (9.1)	0.5421
More English than Spanish	2 (4.8)	0 (0.0)	2 (9.1)	
Other/NA *	1 (2.4)	0 (0.0)	1 (4.6)	
Sibling to child, n (%)				
More Spanish than English	15 (35.7)	7 (35.0)	8 (36.4)	
Equal Spanish and English	7 (16.7)	5 (25.0)	2 (9.1)	0.6160
More English than Spanish	7 (16.7)	3 (15.0)	4 (18.2)	
Other/NA *	13 (31.0)	5 (25.0)	8 (36.4)	
Child to sibling, n (%)				
More Spanish than English	19 (45.2)	10 (50.0)	9 (40.9)	
Equal Spanish and English	7 (16.7)	4 (20.0)	3 (13.6)	1.0000
More English than Spanish	2 (4.8)	1 (5.0)	1 (4.6)	
Other/NA *	14 (33.3)	5 (25.0)	9 (40.9)	
Home literacy environment **Storybook reading at home**, n (%)				
Once or twice a week	13 (31.7)	5 (25.0)	8 (38.1)	
3-4 times a week	11 (26.8)	7 (35.0)	4 (19.1)	0.2557
5+ times a week	7 (17.1)	5 (25.0)	2 (9.5)	
Have not yet started reading	10 (24.4)	3 (15.0)	7 (33.3)	
Storytelling (cuentos) at home, n (%)				
Once or twice a week	17 (41.5)	7 (35.0)	10 (47.6)	
3-4 times a week	7 (17.1)	2 (10.0)	5 (23.8)	0.3846
5+ times a week	8 (19.5)	5 (25.0)	3 (14.3)	
Have not yet started reading	9 (22.0)	6 (30.0)	3 (14.3)	
Maternal English language and literacy skills				
Comprehensive English language skills, n (%)				
Very little	7 (17.1)	3 (15.0)	4 (19.1)	0.7838
Moderate	18 (43.9)	9 (45.0)	9 (42.9)	

	Overall (N = 42)	CLR (N = 20)	ECR (N = 22)	
Good	12 (29.3)	5 (25.0)	7 (33.3)	
Very good native like	4 (9.8)	3 (15.0)	1 (4.8)	
Expressive English language skills, n (%)				
Very little	14 (34.1)	4 (20.0)	10 (47.6)	
Moderate	17 (41.5)	10 (50.0)	7 (33.3)	0.1743
Good	8 (19.5)	4 (20.0)	4 (19.1)	
Very good native like	2 (4.9)	2 (10.0)	0 (0.0)	
English reading level, n (%)				
Very little	18 (43.9)	7 (35.0)	11 (52.4)	
Moderate	14 (34.1)	6 (30.0)	8 (38.1)	0.2521
Good	7 (17.1)	5 (25.0)	2 (9.5)	
Very good native like	2 (4.9)	2 (10.0)	0 (0.0)	

* excluded from p value calculation, † Two-sided Fisher's exact test at 0.05 significance level

APPENDIX B

List of Books and Target Vocabulary

Author/Book Title	Target English Vocabulary	Spanish Translation of target words
Galindo, C. (2008) It's Bedtime, Cucuy/A la Cama Cucuy. Arte Publico Press.	tongue, tugging, shout, brow, whispers, lamb	lengua, jalando, grita, ceja, susurra, ternero
Gonzales Bertrand, D. (2010) The Party for Papá Luis/ La Fiesta de Papá Luis. Bilingual edition Piñata Books	counting, blending, cage, grinning, shoulder, pole	contando, mezclando, jaula, sonriendo, hombro, palo
Gonzales Bertrand, D. (1997) Sip, slurp, soup, soup/Caldo, caldo, caldo. Houston: Piñata Books	stewpot, slicing, ladle, embraces, rolling, bowl	olla, picar, cucharón, abraza, enrrollar, tazón
Ottolenghi, C. (2002) The little red hen /La gallinita roja. Carson-Dellosa Publishing	shed, wheat, beak, wheelbarrow, grain, oven	granero, trigo, pico, carretilla, grano, horno
Zepeda, Gwendolyn. (2008). Growing up with Tamales/Los tamales de Ana. Arte Publico Press.	cornhusk, smear, tongs, handlebars, apron, steering	hoja de maiz, untar, pinzas, manubrio, mandil, manejar

Detailed Statistical Tables

One-Way ANCOVA Results for English Probe (REVP) at Post-Test

DV: English Probe Scores (REVP) At Post Test		Covariate: English Probe (REVP) Scores at Pre- Test		
F(1,39)= 4.734	p = 0.036 < 0.05	Variance explained by intervention = 10.8%	Variance explained by covariate= 17.6%	Effect size CLR vs. ECR = 0.709

Tests of Between-Subjects Effects
Dependent Variable: Eng. Probe T2

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	200.532[a]	2	100.266	7.276	0.002	0.272
Intercept	407.277	1	407.277	29.553	0	0.431
EngProbeT1	114.622	1	114.622	8.317	0.006	0.176
Exp.Group	65.242	1	65.242	4.734	0.036	0.108
Error	537.468	39	13.781			
Total	14490	42				
Corrected Total	738	41				

a. R Squared = .272 (Adjusted R Squared = .234)

Pairwise Comparisons
Dependent Variable=Eng Probe T2

(I) Exp. Group	(J) Exp. Group	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
CLR	ECR	2.51	1.153	0.036	0.177	4.843
ECR	CLR	-2.51	1.153	0.036	-4.843	-0.177

Based on estimated marginal means

One-Way ANCOVA Results for English Standardized Measure (ROWPVT) at Post-Test

DV: ROWPVT Raw Scores Post-Test			COVARIATE: ROWPVT Raw Scores Pre-Test	
F (1,39)= .646	p = 0.426 > 0.05	Variance explained by intervention = 1.6%	Variance explained by covariate= 58.2%	Cohen's Effect Size for CLR vs. ECR of -0.127

Tests of Between-Subjects Effects

Dependent Variable:Receptive Eng. Vocab raw score-T2

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3165.348[a]	2	1582.674	27.389	0.000	0.584
Intercept	442.402	1	442.402	7.656	0.009	0.164
ROWPVTT1raw	3142.485	1	3142.485	54.382	0.000	0.582
Exp.Group	37.323	1	37.323	0.646	0.426	0.016
Error	2253.628	39	57.785			
Total	38403	42				
Corrected Total	5418.976	41				

a. R Squared = .584 (Adjusted R Squared = .563)

Pairwise Comparisons

Dependent Variable:Receptive Eng. Vocab raw score-T2

(I) Exp. Group	(J) Exp. Group	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
CLR	ECR	-1.888	2.349	0.426	-6.64	2.864
ECR	CLR	1.888	2.349	0.426	-2.864	6.64

Based on estimated marginal means

One-Way ANCOVA Results for Spanish Probe (RSVP) at Post-Test

DV: Spanish Probe (RSVP) Scores At Post Test			COVARIATE: Spanish Probe RSVP) At Pre-Test	
F (1,39)= 8.315	p = 0.006 < 0.05	Variance explained by intervention = 17.6%	Variance explained by covariate= 45.1%	Cohen's Effect Size for CLR vs. ECR = 0.438

Tests of Between-Subjects Effects

Dependent Variable:Span Probe T2

Source	Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Corrected Model	503.169[a]	2	251.585	17.797	.000	0.477
Intercept	93.088	1	93.088	6.585	.014	0.144
SpanProbeT1	452.674	1	452.674	32.021	.000	0.451
Exp.Group	117.547	1	117.547	8.315	.006	0.176
Error	551.331	39	14.137			
Total	15429	42				
Corrected Total	1054.5	41				

a. R Squared = .477 (Adjusted R Squared = .450)

Pairwise Comparisons

Dependent Variable:Span Probe T2

(I) Exp. Group	(J) Exp. Group	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]
					Upper Bound
CLR	ECR	3.406[*]	1.181	0.006	5.795
ECR	CLR	-3.406[*]	1.181	0.006	-1.017

Based on estimated marginal means

*. The mean difference is significant at the

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

One-Way ANCOVA Results for Spanish Standardized Measure (TVIP)
at Post-Test

DV: Spanish TVIP Raw Scores Post-Test		COVARIATE: Spanish TVIP Raw Scores Pre-Test		
F (1,39)= 2.583	p = 0.116 > 0.05	Variance explained by intervention = 6.2%	Variance explained by covariate= 72.5%	Cohen's Effect Size for CLR vs. ECR of -0.027

Tests of Between-Subjects Effects

Dependent Variable:Receptive Spanish. Vocab raw score-T2

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3886.405[a]	2	1943.203	52.87	0	0.731
Intercept	240.637	1	240.637	6.547	0.015	0.144
TVIPT1Raw	3784.545	1	3784.545	102.968	0	0.725
Exp.Group	94.931	1	94.931	2.583	0.116	0.062
Error	1433.428	39	36.755			
Total	23549	42				
Corrected Total	5319.833	41				

a. R Squared = .731 (Adjusted R Squared = .717)

Pairwise Comparisons

Dependent Variable:Receptive Spanish. Vocab raw score-T2

(I) Exp. Group	(J) Exp. Group	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
CLR	ECR	-3.01	1.873	0.116	-6.799	0.778
ECR	CLR	3.01	1.873	0.116	-0.778	6.799

Based on estimated marginal means

One-Way ANCOVA Results for English Probe (REVP) at Delayed Post-Test

Dv: English Probe Scores (REVP) At Delayed Post Test		**Covariate:** English Probe (REVP) Scores At Pre-Test		
F (1,39)= 0.983	p = 0.327 > 0.05	Variance explained by intervention = 2.5%	Variance explained by covariate= 13.4%	Cohen's Effect Size for CLR vs. ECR of 0.367

Tests of Between-Subjects Effects

Dependent Variable:Eng Probe T3

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	156.177[a]	2	78.089	3.803	0.031	0.163
Intercept	387.831	1	387.831	18.888	0	0.326
EngProbeT1	123.592	1	123.592	6.019	0.019	0.134
Exp.Group	20.19	1	20.19	0.983	0.327	0.025
Error	800.799	39	20.533			
Total	11677	42				
Corrected Total	956.976	41				

a. R Squared = .163 (Adjusted R Squared = .120)

Pairwise Comparisons

Dependent Variable:Span Probe T2

(I) Exp. Group	(J) Exp. Group	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
CLR	ECR	1.396	1.408	0.327	-1.452	4.244
ECR	CLR	-1.396	1.408	0.327	-4.244	-1.452

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments)

One-Way ANCOVA Results for Spanish Probe (RSVP) at Delayed Post-Test

DV: Spanish probe (RSVP) scores at delayed post test		COVARIATE: Spanish Probe (Rsvp) Scores at Pre-test		
F (1,39)= 4.484	p = 0.041 < 0.05	Variance explained by intervention = 10.3%	Variance explained by covariate= 54.6%	Cohen's Effect Size for CLR vs. ECR of 0.188

Tests of Between-Subjects Effects

Dependent Variable:Span Probe T3

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	370.756[a]	2	185.378	23.849	0	0.55
Intercept	202.418	1	202.418	26.041	0	0.4
SpanProbeT1	364.574	1	364.574	46.902	0	0.546
Exp.Group	34.851	1	34.851	4.484	0.041	0.103
Error	303.148	39	7.773			
Total	17554	42				
Corrected Total	673.905	41				

a. R Squared = .550 (Adjusted R Squared = .527)

Pairwise Comparisons

Dependent Variable:Span Probe T3

(I) Exp. Group	(J) Exp. Group	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
CLR	ECR	1.855[*]	0.876	0.041	0.083	3.626
ECR	CLR	-1.855[*]	0.876	0.041	-3.626	-0.083

Based on estimated marginal means

APPENDIX D

Summary of Correlation Coefficients

Correlation coefficients for researcher-developed probes and standardized outcome measures.

Measures	Eng. Probe at T1 (REVP)	Eng. Probe at T2 (REVP)	Spanish Probe at T1 (RSVP)	Spanish Probe at T2 (RSVP)
ROWPVT at T1	.505**			
ROWPVT at T2		.455**		
TVIP at T1			.613**	
TVIP at T2				.674**

**significant at the 0.01 level (2-tailed).

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