

IMPROVING TEACHING AND LEARNING
FOR ENGLISH LANGUAGE LEARNERS

A Dissertation

by

BROOKE ELIZABETH KANDEL

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

DOCTOR OF PHILOSOPHY

May 2009

Major Subject: Educational Psychology

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ABSTRACT

Improving Teaching and Learning for

English Language Learners. (May 2009)

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While there has been tremendous growth in the numbers of Hispanics and English language learners (ELLs) in our public schools, there has been a lack of educational opportunities offered to these students resulting in low educational achievement and attainment. Additionally, increases in the linguistic and cultural diversity of the student population have not been accompanied by diversification of the corps of teachers and many teachers who serve ELLs are not certified or prepared adequately to meet the linguistic and academic needs of second language learners. This context, in which the potential of our nation's ELLs is not being met by our education system, calls for research focusing on the education of ELLs. The three studies that constitute this dissertation address two critical areas, reading and mathematics, by documenting the cognitive reading strategies that middle school Hispanic ELLs utilize and evaluating professional development activities for teachers of ELLs.

The mixed methods studies used student self-report data from the Reading Strategies Questionnaire (RSQ) as well as observational and survey data from a

professional development program. Means and standard deviations were reported from the RSQ. Data from the observations of the professional development program were coded to determine the topics that were addressed in the program. Results from the RSQ indicate that Hispanic ELLs, in general, do not consistently adopt a strategic approach to reading in English. Additionally, while professional development is one avenue to improve the instruction that Hispanic ELLs receive, results from the observations indicate that teachers receive professional development of limited quality and that little of the professional development is connected to instruction for ELLs. Findings from this series of studies can be utilized to inform reading instruction for ELLs and to enhance professional development opportunities for teachers of ELLs.

DEDICATION

This dissertation is dedicated to the English language learners who enrich our public schools with their language, culture, and life experiences and especially to the English language learners in the bilingual program at Collins Elementary School in Houston, Texas.

ACKNOWLEDGEMENTS

The completion of this project and my graduate studies would not have been possible without the support and assistance of many individuals. I would like to thank my committee chair, Dr. Yolanda Padrón, for her guidance and encouragement. I could not imagine having a more dedicated, generous, and kind mentor. Undoubtedly, I would not have been able to achieve this milestone without her support. Additionally, I would like to express my gratitude to Dr. Hersh Waxman for gently introducing me to educational research and for always answering “just one more question,” to Dr. Rafael Lara-Alecio for his acceptance of and unwavering support for the “Houston transplant,” and to Dr. Stephanie Knight for her guidance and feedback throughout the course of my research.

I also send my thanks to la familia Almonte Rosario in Las Caobas, la República Dominicana for teaching me my first Spanish words, sharing their home and life with me, and helping me to see the world through their eyes. I credit them for first piquing my interest in language and culture.

Finally, and most importantly, I would like to thank my family for their encouragement and patience during this long journey. I cannot express how much I appreciate the sacrifices they made in order for me to achieve my goals, and I am especially grateful for the nurturing and care they provided Xavier and Anika while I was away from home.

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CHAPTER I

INTRODUCTION

The population of the United States is becoming increasingly diverse. In 2006, for example, the population reached 300 million, with almost one third from minority racial and/or ethnic groups (Pew Hispanic Center, 2006; U.S. Census Bureau, 2006). Much of this recent population growth can be attributed to increases in immigration (August, 2003). Data from the Pew Hispanic Center (2006) indicate that of the last 100 million inhabitants the United States has gained, over half are immigrants or the children of immigrants. The growth trend in terms of racial and ethnic diversity is expected to continue as projection estimates show steady growth amongst the Black, Asian,¹ Hispanic, and mixed race populations (U.S. Census Bureau, 2004).

It is not surprising that just as the nation's population has become increasingly diverse, so has the student population in America's public schools. Of the more than 46 million school-age students enrolled in public schools in the 2002-2003 school year, for example, over one third were from minority racial and ethnic groups. Hispanic students alone made up 18% of the total enrollment in 2002-2003, an increase of 64% from the 1993-1994 school year (Fry, 2006). The growth in racial and ethnic diversity found in

This dissertation follows the style of *Middle Grades Research Journal*.

¹ While I am aware that preferences vary in terms of labeling students as Hispanic, Latino, etc., I have elected to maintain consistency with the Department of Education, and I thus use the term Hispanic throughout my dissertation.

our public schools has also brought about an increase in the number of language minority students enrolled in public schools (Christian, 2006; Short & Fitzsimmons, 2007). As noted in Figure 1, during the 10-year period preceding the 2005-2006 school year, the total public school enrollment increased by 4%. In contrast, during the same time period the population of English language learners (ELLs) that is students with limited English proficiency, grew by over 55%. For the 2005-2006 school year, the ELL population totaled over 5 million, just over 10% of the total school population (U.S. Department of Education [U.S. DOE], 2007). Projections for the future estimate that by 2020 the population of school age children will grow by 4.8 million, and Hispanic children, many of whom are ELLs, will account for 98% of the increase (Fry, 2006).

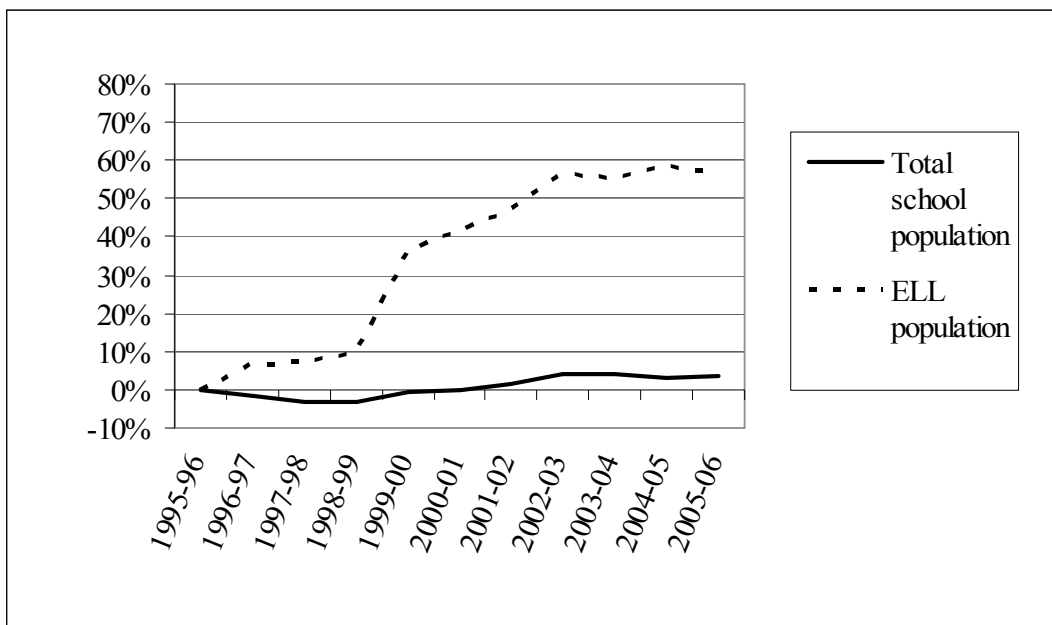


Figure 1. Growth of ELL and total school population between 1995-96 and 2005-06.

This increase in the number of ELLs at the national level is reflected in population changes in the state of Texas. Between 1989 and 2001, for example, the state's total population increased by 23% while the ELL population in Texas grew by 84% (Reid, 2001). As of 2005, the ELL population was estimated to be 14% of the total school population or a total of 630,000 (Lara-Alecio et al., 2005). This growth in the number of ELLs in Texas public schools is expected to continue as new immigrants arrive in Texas and the U.S.-born children of immigrants begin school.

Not only is there growth in the public school population in the number of students who speak a language other than English, but the number of different languages spoken has also increased. There are over 400 languages that are spoken by ELLs in the nation's schools; nonetheless, Spanish continues to be the language that is spoken most frequently. Almost 80% of ELLs in the nation's schools speak Spanish as a first language. The next most commonly spoken language, Vietnamese, is spoken by only 2% of the ELL school population followed by Hmong (1.6%), Chinese (1%) and Korean (1%). The remainder of the over 400 languages used are each found in less than 1% of the total ELL student population (Kindler, 2002).

Although the assumption exists that native Spanish speakers, who make up the greatest proportion of the ELL population, are a homogenous group, the U.S. Spanish-speaking population is in fact quite diverse. There is great variability among Hispanic students in terms of country of origin, levels of primary language, prior educational experience, and socioeconomic status, and it is important for schools and educators to understand the experiences of Hispanic students as well as the factors that influence

these students' education (García, 2001; Peregoy & Boyle, 2000). In addition to the issue of limited English proficiency, social and economic factors impact Hispanic students' education. According to García (2001), nearly half (46%) of all Hispanics, for example, live in central cities of metropolitan areas, compared to non-Hispanic Whites (21%). This is significant because students who live in inner-cities tend to live in households and communities that experience high and sustained poverty. Additionally, Hispanic students attend schools with more than twice as many poor classmates as those attended by White students (46% vs. 19%), and schools with high concentrations of poor students, for example, tend to have buildings that are in disrepair, have limited or out of date technology, and are staffed with large numbers of uncertified teachers (García, 2001). These social, economic, and linguistic issues must be addressed in meeting the educational needs of Hispanic ELLs.

The Need for Qualified Teachers

The recent increase in the population of students from diverse backgrounds, however, has not been accompanied by ethnic and linguistic diversification of the corps of teachers. Despite research suggesting connections between increases in the percentage of minority teachers and positive outcomes for culturally and linguistically diverse students, the teacher corps is composed primarily of white, female, middle class English-monolinguals, and the number of minority teachers in our public schools does not approach representation of the diverse student body (Zumwalt & Craig, 2005). While close to 20% of public school students are Hispanic, less than 5% of teachers are Hispanic (National Education Association, 2004).

Additionally, there is a shortage of teachers who are adequately qualified to serve linguistically diverse students, and even teachers who are appropriately credentialed lack the necessary preparation to provide appropriate learning opportunities for second language learners (Gándara, Maxwell-Jolly, & Driscoll, 2005; Téllez & Waxman, 2006). Estimates have indicated that nearly half of the teachers assigned to teach Hispanic ELLs have not received any preparation specific to the education of language learners. Presently, about 42% of all public school teachers in the U.S. have at least one ELL student in their class, but less than 3% of these teachers are certified ESL or bilingual teachers (Liagas & Synder, 2003). Further complicating the issue is that the shortage of teachers certified to work with ELLs is most acute in urban areas where the majority of ELLs live (Menken & Holmes, 2000). In other words, the current educational context is one in which the number of teachers prepared to teach Hispanic students, many of whom are ELLs, falls far short of the tremendous need for such teachers.

Academic Achievement of Hispanic Students and ELLs

In spite of the lack of appropriately prepared teachers, some Hispanic ELLs have been academically successful. Nonetheless, U.S. schools have generally failed to provide opportunities that produce educational success amongst second language learners (Christian, 2006; Short & Fitzsimmons, 2007). Hispanic students have been particularly underserved in U.S. schools and, as such, demonstrate lower levels of school achievement than their counterparts (Jiménez, 2004; Liagas & Snyder, 2003; Short & Fitzsimmons, 2007). According to NAEP data, while Hispanic 4th grade students demonstrated slight scale score increases in reading, 8th grade Hispanic students have not

done as well (Perie, Grigg & Donahue, 2005). In fact, as Figures 2 and 3 illustrate, the most current NAEP data reveal that only 14% of Hispanic public school students in the 8th grade are at or above the proficient level in reading and 15% of Hispanic students are at or above the proficient level in mathematics (National Center for Educational Statistics [NCES], 2007). If we look at 8th grade ELLs from all racial and ethnic backgrounds, less than 5% of ELLs are at or above the proficient level in reading and 7% are at or above the proficient level in mathematics (NCES, 2007).

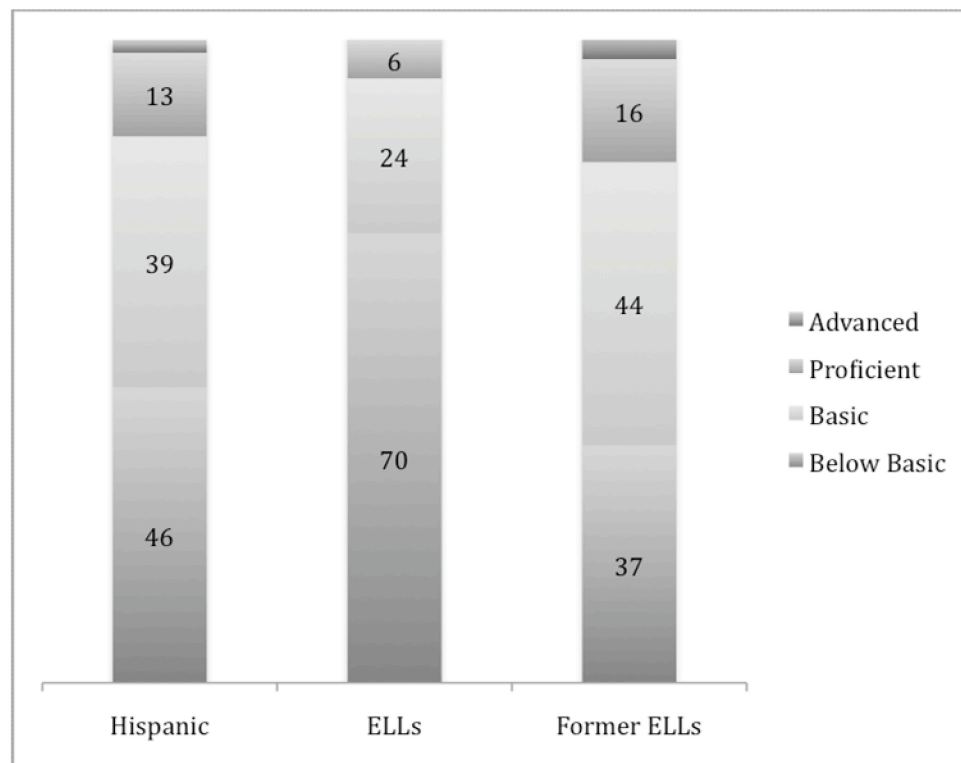


Figure 2. Percentage of Hispanics, ELLs, and former ELLs meeting NAEP performance levels for 2007 8th grading reading test.

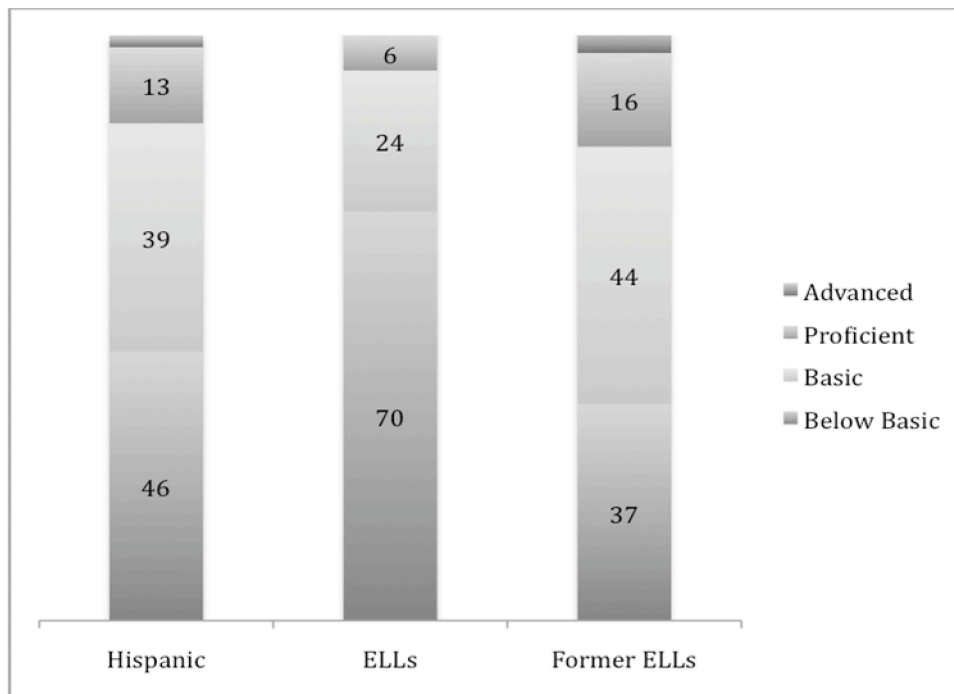


Figure 3. Percentage of Hispanics, ELLs, and former ELLs meeting NAEP performance levels for 2007 8th grading mathematics test.

State-level achievement test results show higher achievement levels for Hispanic students than do NAEP results, however this difference could be attributed in part to differences in the level of performance that is associated with proficiency or meeting the minimum standard (Fuller, Wright, Gesicki & Kang, 2007). While NAEP results distinguish between below basic, basic, proficient and advanced, results for TAKS tests are reported under three categories: does not meet standard, meets standard and commended performance. Students who meet the minimum standard are considered adequately proficient in the content. For the 2007 administration of the Texas Assessment of Knowledge and Skills (TAKS) test, for example, 79% of 7th grade

Hispanic students met the minimum passing standard in reading and 69% met the minimum standard in mathematics. Of the 7th grade ELLs of all racial and/or ethnic backgrounds who were classified as limited English proficient at the time of test administration, 41% and 44% met the minimum passing standard in reading and mathematics respectively (Texas Education Agency [TEA], 2007a). It is important to note that these test results do not reflect the large number of Hispanic students, many of whom are ELLs, who drop out during middle and high school and, thus, do not participate in state wide achievement tests at the secondary level (Losen, Orfield, & Balfanz, 2006).

Since the population of students classified as limited English proficient is constantly changing, with advanced English speakers leaving the group and less proficient students entering the group, disaggregated achievement test results for ELLs can be somewhat misleading (Abedi, 2002; Short & Fitzsimmons, 2007). There are, however, other sources of information from which we can gauge the success of our schools in serving ELLs. At the national level, NAEP scores for students who were formerly classified as ELLs but have been exited from language programs are available. This information is particularly valuable in discussions related to the educational status of ELLs because it reveals the extent to which students who have supposedly been given the educational opportunities, including sufficient academic and linguistic preparation, to be on par with monolingual-English speaking students are academically successful. Unfortunately, NAEP data reveal that 84% of former ELLs in the 8th grade level are at or below the basic level in reading, while 15% are considered proficient, and less than 1%

of former ELLs are advanced in English reading (see Figure 2). NAEP results reveal a similar situation in mathematics content (see Figure 3). Of former ELLs in the 8th grade, 81% are at or below the basic level, 16% are considered proficient, and 4% are considered advanced (NCES, 2007). These results suggest that ELLs are not being provided the educational opportunities necessary to be successful.

State-level tests specifically designed for and administered to ELLs are another source of information regarding the achievement of students who are learning English. Results from the Texas English Language Proficiency Assessment System, a system for monitoring ELLs' progress across the four language domains of listening, speaking, reading, and writing, seem to indicate that Texas public schools are successful in developing ELLs' English language proficiency. Results from the reading portion of the 2007 TELPAS, for example, indicate that 7th grade ELLs who have only recently enrolled in U.S. schools are more likely to be beginning readers than those 7th grade ELLs who have been in U.S. schools for several years. Furthermore, only 9% of 7th graders who have been in U.S. schools for five or more years have not reached advanced or advanced high reading proficiency (TEA, 2007b).

Related to the low achievement amongst Hispanic students and ELLs, another important issue that has persisted is the achievement gap, especially between White and Hispanic students. Although Hispanic students' performance on both NAEP reading and mathematics tests has improved since the 1990's, White students' performance has also improved, and the achievement gap between the two groups has remained virtually unchanged (Lee, 2006; Lee, Grigg, & Dion, 2007; Lee, Grigg, & Donahue, 2007). A 25-

point gap exists between the reading scores of Hispanic and White students and a 26-point gap in mathematics.

Educational Attainment of Hispanic Students and ELLs

Low achievement levels not only reveal that Hispanic students are not being adequately served in our schools, but also may contribute to low graduation rates amongst Hispanic and other minority students. While national graduation rates as a whole are unacceptable, with about 68% of all students who enter 9th grade graduating with a regular diploma, Hispanics and other minority students are disproportionately affected by high drop out rates (Orfield, Losen, Wald, & Swanson, 2004). Figure 4 details high school completion rates by ethnicity for the year 2001 as compiled by Orfield et al. (2004). ELLs from all ethnicities also have low graduation rates. According to NCES data (2004), ELLs who reported speaking English with difficulty demonstrated a less than 20% likelihood of completing high school.

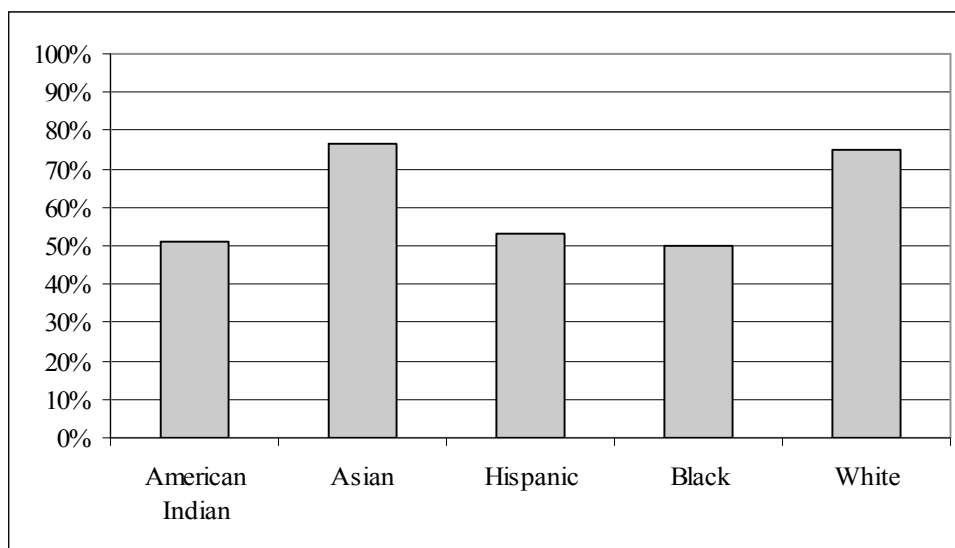


Figure 4. High school completion rate by race/ethnicity for 2001.

Summary

In summary, while there has been tremendous growth in the numbers of Hispanics and ELLs in our public schools, there has been a lack of educational opportunities offered to these students resulting in low educational achievement and attainment. Additionally, increases in the linguistic and cultural diversity of the student population have not been accompanied by diversification of the corps of teachers and many teachers who serve ELLs are not adequately certified or prepared to meet the linguistic and academic needs of second language learners. This context, in which the potential of our nation's ELLs is not being met by our education system, calls for research focusing on the education of second language learners.

ELLs, however, especially those in the middle grades, are particularly underserved both by our schools and the research community. The lack of reading and

mathematics achievement for ELLs is pronounced in the middle grades, and it is in the middle grades, beginning around grade four and continuing through high school, that students are expected to read well in order to gain access to content area material (Chall, 1987). Similarly, middle school mathematics achievement is of importance to the long-term academic success of ELLs because mathematics grades and achievement test from upper elementary and middle school serve as tracking indicators, whether formal or informal, for high school mathematics experiences which in turn act as a gateway to college opportunities (Secada, 1992; Reyes, 2007). However, in spite of the high stakes nature of middle school reading and mathematics, support for ELLs, such as native language instruction, is frequently reduced or withdrawn during the middle grades, and many middle school teachers are unprepared to effectively serve second language learners (Short & Fitzsimmons, 2007; Echevarria, Short, & Powers, 2005). Even with the tremendous challenges that middle grades ELLs and their teachers face, this group of students has received little attention from the research literature. Much of the literacy research carried out over the past few decades, for example, has focused primarily on English-monolinguals in the primary grades and to a lesser extent on young ELLs (Roe, 2004; Short & Fitzsimmons, 2007; Vacca, 1998).

The paucity of research focusing on middle school students coupled with the lack of educational opportunities provided to ELLs makes it imperative to conduct research with middle school second language learners since little is known about this student subgroup. In the following three studies, therefore, I examined issues related to the education of Hispanic ELLs, especially those at the middle school level. These studies

addressed research with Hispanic ELLs in the following areas: reading comprehension at the middle school level, cognitive reading strategy use, and professional development with teachers of ELLs. The first study consisted of a research synthesis that examined reading comprehension with middle school ELLs. Specifically, the synthesis included a systematic review of the literature to determine how and to what extent vocabulary and strategy use and instruction work to improve the reading comprehension of Hispanic middle schools ELLs.

The second study examined middle school second language learners' perceptions of the cognitive reading strategies that they use while reading English texts. In this study, I administered the Reading Strategy Questionnaire to approximately 850 Hispanic middle school students. The questionnaire consisted of 20 strategies that have been identified by previous research as used by Hispanic students while reading English text. Results from this study provide information about the number and type of strategies that Hispanic middle school students, many who are second language learners, perceived using while reading English text. This information is important since knowing the type of strategies that students are using can provide educators with information about what strategies need to be taught.

The third study examined a professional development program by investigating the extent to which issues related to ELLs were addressed. In this study, I analyzed the content of a mathematics professional development training and documented the extent and nature of the information that teachers were provided about teaching second

language learners. The results of this study can inform the design of appropriate professional development training for teachers of ELLs.

In summary, the three studies that constitute this dissertation addressed two critical areas for middle school second language students: reading and mathematics. The first two studies addressed reading instruction for ELLs. The first of these studies systematically examined research related to reading comprehension strategies that have been found to be effective with middle school ELLs while the second study investigated Hispanic middle school students' perceptions of the cognitive reading strategies that they used while reading in English. The third study addressed another important issue for second language students, that is, classroom practices, and professional development focused on mathematics for teachers of ELLs.

CHAPTER II

INVESTIGATING VOCABULARY AND READING STRATEGIES WITH MIDDLE GRADES ENGLISH LANGUAGE LEARNERS: A RESEARCH SYNTHESIS

For adolescent English language learners (ELLs), many of who speak Spanish as a first language, comprehending academic English text is a key struggle in finding success in content area classes and on high stakes exams. The number of adolescent ELLs who comprehend English texts at only a limited literal level is alarming. Results from the reading component of the 2007 National Assessment of Educational Progress (NAEP), for example, revealed that approximately 95% of eighth grade ELLs from all racial and ethnic backgrounds are below the proficient level in English reading while more than 80% of former ELLs are considered below proficient. Furthermore, 86% of eighth grade Hispanic public school students are below proficient (Lee, Grigg, & Donahue, 2007). Students who score below the proficient level are unable to consistently make inferences, draw logical conclusions, and make connections while reading, components that are essential to reading comprehension. Without the ability to comprehend complex and cognitively challenging English texts, ELLs are not likely to be successful in middle school and beyond (Biancarosa & Snow, 2006; Kamil, 2003).

A large body of research, albeit mostly conducted with younger students, supports the beneficial effects of reading comprehension instruction (see Block, Gambrell, & Pressley, 2004 for a comprehensive review). Nonetheless, the type and

extent to which middle level students, especially ELLs, receive reading comprehension instruction is unclear (Block & Pressley, 2002; Pressley, 2004; Vaughn & Klinger, 2004). There are several potential reasons why middle level ELLs may not receive adequate reading comprehension instruction. First, middle level teachers may perceive that teaching reading is not part of their job and even teachers who endeavor to provide reading comprehension instruction may not be adequately trained to do so. Although preparation programs increasingly require literacy or reading courses for secondary content area teachers, these courses typically provide only descriptions of and procedures for specific strategies for teaching reading comprehension. This superficial treatment of reading comprehension fails to help teachers understand how students process text and does not immerse teachers in the complexities and practicalities of teaching reading comprehension to students of varied reading proficiencies. Conley (2008), for example, notes that secondary teachers frequently use cognitive strategies, such as graphic organizers, as a means to teach content, but rarely are teachers able to delve into the more complex task of explicitly teaching students how to independently utilize cognitive strategies to facilitate text comprehension and content learning.

In addition to this limited training in reading comprehension instruction, teachers lack preparation for work with culturally and linguistically diverse students. A NCES report noted that training focused on the needs of ELLs was the area of professional development in which teachers were least likely to participate (Parsad, Lewis, Farris, & Greene, 2001), and secondary teachers are even less likely than their elementary counterparts to have received training specific to providing literacy instruction to ELLs

(Ehlers-Zavala, 2008). One potential consequence of this lack of training for work with ELLs is that secondary teachers may hold negative perceptions of students who are not proficient English readers. Specifically, teachers of ELLs may not teach English reading comprehension because they perceive that ELLs are not sophisticated enough to handle the strategies necessary for analysis and interpretation of texts (Olson & Land, 2007).

This lack of preparation for secondary teachers' work with ELLs coupled with limited training in reading comprehension instruction suggests that adolescent ELLs receive little support to enhance reading comprehension. Yet, the pervasive, low achievement of middle level ELLs and Hispanic students necessitates that this group of students be provided high-quality reading comprehension instruction in order to be able to read well and access content area material (Short & Fitzsimmons, 2007). In the present research synthesis, I seek to address this challenge by providing middle level educators an accessible research base from which they can inform their teaching practices when working to teach reading comprehension to students and, in particular, to ELLs (International Reading Association & National Middle School Association, 2001; Roe, 2004; Short & Fitzsimmons, 2007).

In the next sections I provide an overview of how reading comprehension has been defined. In addition, I review reading comprehension research related to vocabulary knowledge and cognitive reading strategies with ELLs.

What Is Reading Comprehension?

Comprehension has been defined by Gambrell, Block and Pressley (2002) as “acquiring meaning from written text” (p. 4). Other experts in reading choose to add

more specificity to their descriptions of reading comprehension. Sweet and Snow (2003), of the RAND Reading Study Group (RRSG), for example, reported that the RRSG defines reading comprehension as a multi-dimensional process involving the reader, the text and the activity during which the reader extracts information from the words read and creates meaning at the same time. Finally, in an analysis of reading research executed with native English speakers, the authors noted the importance of vocabulary development and instruction as well as the central role of strategy instruction in studies focusing on reading comprehension (National Institute of Child Health and Human Development [NICHD], 2000). Regardless of specific authors' choice of words in describing comprehension, most scholars in the field would agree that reading comprehension is complex and multi-faceted (Ivey, 1999; Moore, Bean, Birdyshaw & Rycik, 1999).

Reading Comprehension and Vocabulary Development for ELLs

Many researchers have argued that vocabulary plays a critical role in reading comprehension (Anderson & Freebody, 1981; NICHD, 2000). Both incidental vocabulary development and purposeful vocabulary instruction have been addressed in the research literature. Students can incidentally learn vocabulary through oral language and extensive reading, and students who read extensively tend to have larger vocabularies (Sternberg, 1987). The probability of learning an unknown word in this manner is low, however, especially for less able readers. While the cumulative effects of incidental vocabulary most certainly contribute to vocabulary development, vocabulary instruction also has a place in encouraging vocabulary development and enabling

reading comprehension (Carlo et al., 2004; Nagy, 1997; Swanborn & de Glopper, 1999). Research focusing on English monolinguals and explicit vocabulary instruction supports direct and varied age-appropriate vocabulary instruction as an important component of teaching comprehension (Beck, Perfetti, & McKeown, 1982; NICHD, 2000; Pressley, 2001; Stahl & Fairbanks, 1986).

Just as vocabulary is considered an important dimension in English-monolingual students' ability to comprehend text (NICHD, 2000), the National Literacy Panel on Language-Minority Children and Youth has noted the critical role of vocabulary in reading comprehension and general literacy development for ELLs (August & Shanahan, 2006). Both incidental and purposeful vocabulary development may be especially important for ELLs who encounter more total unknown words and are less able to use contextual and linguistic clues to decipher unfamiliar vocabulary than monolingual-English speakers (Nagy, 1997). However, although the role of vocabulary in reading comprehension for English monolinguals has been widely studied, only a handful of studies have addressed vocabulary and reading comprehension for ELLs. Researchers have approached the issue in two ways. While some studies examine the role of Spanish-English cognate identification and strategic use in reading comprehension, other studies look more generally at vocabulary knowledge, both in the first and second languages. Overall, however, studies embodying both approaches support that vocabulary is an important dimension of reading comprehension (García, 1991; Nagy, García, Durgunoglu, & Hancin-Bhatt, 1993).

Reading Comprehension and Strategy Use for ELLs

Along with noting the role of vocabulary in reading comprehension for native English speakers, the National Reading Panel highlighted the importance of strategy use and instruction. Reading strategies, purposeful activities or tactics that assist in comprehending text, include practices such as clarifying reading purposes, determining importance, continual monitoring of comprehension, questioning, summarizing, using mental imagery, and making inferences based on text and life experiences (Brown, 1980; Dole, Duffy, Roehler, & Pearson, 1991; Gambrell & Jawitz, 1993; Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989). Research supports that good readers actively and automatically utilize a repertoire of these comprehension strategies while reading (Pressley & Afflerbach, 1995).

In addition to supporting the role of strategy use in reading comprehension, research also points to the positive influence of reading strategy instruction upon reading comprehension outcomes (Pressley, 2001). The line of research surrounding strategy instruction first focused on instruction of individual strategies such as identifying story elements, story-mapping, question generation and imagery (Beck, Omanson, & McKeown, 1982; Gambrell & Bales, 1986; Gambrell & Jawitz, 1993; Idol & Croll, 1987). In these experimental studies carried out mostly with English-monolingual elementary students, researchers found that various forms of strategy instruction did indeed have a positive effect on students' reading comprehension. Later studies demonstrated that through teacher modeling and student guided and independent practices, instruction that encouraged the simultaneous use of multiple strategies in

making sense of text was also effective in improving student comprehension (Palinscar & Brown, 1984; Pressley et al., 1992).

The use of reading strategies is also an important component in the comprehension process for ELLs (August & Shanahan, 2006). In contrast to the large body of studies focusing on English-monolingual students, the paucity of research examining ELLs and reading strategies is especially pronounced when searching for studies that focus on middle grades ELLs (García, 2000 & 2003; Genesee & Riches, 2006; Short & Fitzsimmons, 2007; Sweet & Snow, 2003). The limited number of studies focused on the issue has addressed reading strategy use, cross-linguistic strategy transfer, response to strategy instruction, and differences in strategy use by reading ability and text genre. In general, studies conducted with middle grades students suggest that the use of various reading strategies positively influences general reading success and, more specifically, enhances reading comprehension in English (García, 1998; Jiménez, 1997; Jiménez, Garcia, & Pearson, 1995; 1996).

Purpose of the Study

Findings from studies focusing on vocabulary development and cognitive reading strategies within the context of reading comprehension by middle grades ELLs can provide educators information on how to effectively instruct ELLs to become successful English readers. Educators need an accessible source that summarizes and explains the extant research pertaining to the topic of reading comprehension and middle level ELLs. Educational practitioners may typically have limited access to the results of research studies, and commonly, the research that reaches educators may have been filtered in a

haphazard way. A school principal, for example, may come across a relevant research article at a professional conference and decide to share the findings with teachers and mandate implementation of a practice that was addressed in the article. In this scenario, the teacher is unable to ascertain the quality of the research, the validity of the findings, and the extent to which other research supports or contradicts the study results. Research syntheses are a well-suited approach to addressing this issue by providing educators systematic access to the results of research on reading comprehension and middle school ELLs.

While previous syntheses have broadly examined second language literacy across and within different subgroups of the ELL population (August & Shanahan, 2006; Genesee, Lindholm-Leary, Saunders & Christian, 2006; Short & Fitzsimmons, 2007), the focus of this synthesis is more specific to ELLs' reading comprehension. The purpose of the present synthesis is to systematically identify research studies conducted in middle grade settings to determine how and to what extent vocabulary knowledge, vocabulary instruction, reading strategy use, and reading strategy instruction contribute to the English reading comprehension of middle level ELLs. This synthesis is important because of its detailed focus on English reading comprehension with middle level second language learners in the United States.

Methods

Selection Criteria and Search Strategy

This research synthesis is based on a systematic review of the research literature focusing on the reading comprehension of middle school ELLs in U.S. schools.

Informed by the work of Genesee, Lindholm-Leary, Saunders and Christian (2006), specific criteria were established to determine initial inclusion of research studies. Specifically, studies had to be published between 1988 and 2008 and focused on vocabulary knowledge and/or strategy use and instruction within the context of reading comprehension of ELLs in the United States. Study samples had to include a majority of students from the fifth, sixth, seventh, and eighth grades and for studies with linguistically heterogeneous samples, data had to be disaggregated for ELLs. The journals examined in the initial phase of the research synthesis were chosen in order to represent the top research journals in the field of education as well as journals specifically addressing the specialized areas of ELLs, reading, and middle level students (see Appendix A for a list of journal titles).

Online bibliographic search tools, such as EBSCO and JSTOR, were utilized to search within the journals for articles containing vocabulary, strategies, and reading comprehension combined with the keywords bilingual, limited English proficient, English language learner, English as a Second Language, immigrant, and at-risk. Additionally, manual searches through journal article titles and abstracts were conducted in order to locate articles relevant to vocabulary knowledge, vocabulary instruction, strategy use and instruction, and reading comprehension for middle grade ELLs. This initial search, including electronic and manual searches, produced 10 studies that appeared relevant.

After the initial search was completed, a secondary search through the reference lists of the 10 articles was conducted to obtain additional information on the topic. Every

effort was made to obtain relevant technical reports, conference proceedings, dissertation theses, and journal articles that were found during the secondary search. Eight additional articles were found; however, five of those were preliminary technical reports or unpublished theses and were later published as journal articles that had already been included in the synthesis.

Finally, the 13 total retrieved studies were evaluated for study quality. The evaluation of study quality was an essential step because in a research synthesis the investigator does not have access to the original data, but rather must rely on the results presented by study investigators. The criteria for study quality were based upon the guiding principles for scientific research in education set forth in the National Research Council's Scientific Research in Education (Shavelson & Towne, 2001). Specifically, studies were included in the final synthesis if the research was empirical and was connected to a relevant theoretical framework or conceptual model, utilized an appropriate research design to investigate the study's research questions, included clear and detailed descriptions of the research, and presented logical conclusions based on the data found. The studies did not necessarily have to include an experimental design, and studies conducted in naturalistic settings that could be replicated through similar qualitative methods were also included. After evaluating each study for quality, 9 of the 13 research studies remained in the final synthesis, and they are all noted in Appendix A.

Coding and Analysis

The nine studies included in the research synthesis represented a variety of research paradigms, including quasi-experimental interventions, case studies, interviews,

and think alouds and, thus, the analysis of the studies needed to address both quantitative and qualitative data. Table A-1 outlines specific information on each study. While I had originally planned to synthesize results by tallying study findings according to the a priori categories that I had used to locate articles, namely vocabulary knowledge, vocabulary instruction, reading strategy use, and reading strategy instruction, I found that this coding system oversimplified the complexities of reading comprehension for ELLs and did not reflect some of the most compelling findings in the study suggesting that vocabulary and reading strategies are intricately connected for ELLs. The findings of one study, for example, suggested that knowledge of Spanish-English cognates, words that are similar in both form and meaning, contribute to Spanish-speaking ELLs' English reading comprehension (Nagy et al., 1993). Using my a priori categories, this study would have fallen under vocabulary knowledge, yet categorizing this study as strictly related to vocabulary knowledge would have ignored the finding of another study that proposed cognates to be a type of reading strategy used by Spanish-speaking ELLs (Jiménez et al., 1996). Additionally, the use of the a priori categories resulted in a document akin to a comparison and contrast narrative literature review and inhibited critical analysis and synthesis of the studies.

My second attempt to synthesize the findings of the nine studies was more reflective of the constant-comparative method frequently used in qualitative research (Glaser, 1978). To become intimately familiar with the research, I began by reading and reviewing each study multiple times. Each time I read through a study, I noted salient information for each study, such as participants, research questions and design, and I

recorded key words related to the findings. Next, I searched for themes from the findings that emerged across the studies and looked for words or phrases to tentatively identify those themes. I then returned to the findings of the studies and sorted the findings into the identified themes. During this process, I looked for disconfirming instances within the studies' findings to establish the validity of my themes. Finally, I critically appraised and summarized the findings within each theme always with the intention of providing relevant information for middle level classroom practitioners.

Results

Three themes relevant to middle level classroom practice emerged from the findings of the studies. They are: (a) the essential role of vocabulary knowledge in English reading comprehension, (b) the role of first language and transfer in reading comprehension, and (c) instruction to enhance English reading comprehension. In the following sections, I summarize the research under each of these three themes.

Essential Role of Vocabulary Knowledge in English Reading Comprehension

Research has suggested that limited vocabulary contributes to the comprehension problems experienced by struggling readers (NICHD, 2000). The studies in this synthesis extend this understanding by documenting the key role of vocabulary in English reading comprehension for ELLs. The findings relevant to this theme were extracted from two different comprehension contexts: reading comprehension as measured by reading achievement tests and reading comprehension accessed through interactions with authentic texts. This distinction is important because the type of comprehension necessary to be successful on reading achievement tests may be different

from the type of comprehension necessary to read for meaning in more authentic settings. Nonetheless, these two distinct settings produced overlapping findings suggesting that vocabulary knowledge is a key component in ELLs' ability to comprehend English texts.

In studies using reading achievement tests as the context for measuring reading comprehension, English vocabulary knowledge was found to be an essential determinant in students' level of English reading comprehension (García, 1991; Nagy et al, 1993). García (1991) sought to understand the factors influencing Spanish-speaking Hispanic students' English reading test performance. Results indicated, not surprisingly, that native English-speaking students demonstrated superior reading test scores and statistically significantly higher vocabulary knowledge than their Spanish-speaking ELL peers. Further investigation with a subsample of participants, revealed the influence of limited vocabulary knowledge on ELLs' answers on the reading test, particularly on textually implicit questions, or those items that asked students to gather information from various parts of the reading test passage. Through interviews, García found that many of the Spanish-speaking ELLs comprehended the test passages, but missed test questions due to unknown or misinterpreted vocabulary in the test items. In one reading test passage, for example, the words "freedom" and "free state" were used to describe an animal's habitat. In contrast, the test question used the clue phrase "native environment." Due to misinterpretation of the vocabulary in the paraphrase, students did not believe the question was answered in the passage, and incorrectly guessed the answer or attempted to create their own erroneous interpretation of the question. When the paraphrase

“native environment” was defined in Spanish, however, students were able to demonstrate understanding of the passage by answering the question correctly. Data thus supported that unknown English vocabulary, not inability to answer inferential questions or comprehend text, was a major factor impeding ELLs’ reading test performance.

Findings from studies in more authentic reading settings similarly suggested vocabulary as a key factor in English reading comprehension. In a pair of studies comparing the reading processes and strategies of bilingual readers proficient in English reading, bilingual readers not proficient in English reading, and proficient English-monolingual readers, Jiménez and colleagues (Jiménez et al., 1995; 1996) found that, in contrast to the proficient English-monolingual reader who rarely needed to focus on vocabulary to aid comprehension, all the bilingual readers, both proficient and less proficient, held a word-driven approach to comprehension in that vocabulary was the focus of much of the students’ comprehension efforts. The processes and strategies enacted in order to resolve unknown vocabulary, however, distinguished the proficient bilingual readers from the less proficient bilingual readers. The proficient bilingual readers effectively used multiple reading strategies such as using context, monitoring, prior knowledge, restating and making inferences in the service of understanding unknown vocabulary in order to extract meaning from the text. In contrast to this strategic approach to unknown vocabulary adopted by proficient bilingual readers, the less proficient bilingual readers’ efforts to decipher unknown vocabulary primarily consisted of decoding and forced conclusions, both of which ultimately subtracted from their ability to comprehend texts as a whole.

To summarize, the work synthesized in this theme documents the role of vocabulary knowledge across types of reading comprehension tasks (i.e., reading tests and more authentic texts) and levels of English reading proficiency. The findings described corroborate previous work suggesting the importance of vocabulary for ELLs' understanding of English text (Huckin, Haynes, & Coady, 1995; Laufer, 1997) and suggest the need for including vocabulary development as an essential feature of reading comprehension instruction with ELLs.

The Additive Nature of the First Language in Reading Comprehension

Proponents of bilingual education have long communicated the importance of using the first language to learn subsequent languages and have highlighted theory that proposes a common underlying proficiency that allows language, content, and competencies to transfer from one language to another (Cummins, 1980). The findings from studies included in the synthesis corroborate this claim, suggesting that ELLs' first language (L1) serves as a valuable resource in English reading comprehension.

Use of the first language. Some studies described a general reliance on the L1 during English comprehension efforts. Langer, Bartolomé, Vásquez, and Lucas (1990), for example, found that ELLs, regardless of oral English proficiency, relied on Spanish, their L1, to support comprehension when encountering comprehension difficulties in English; however the converse, using English to support Spanish comprehension, occurred much less frequently. Jiménez (1997) reported similar results, but specifically with bilingual students considered to have limited literacy skills. Results from the studies conducted by Jiménez and colleagues and described under the first theme (Jiménez et al.,

1995, 1996) further supported this use of the L1 for English reading comprehension and documented reading strategies unique to proficient readers who have access to more than one language.

Uniquely bilingual strategies. The use of transfer, translation and cognates were all found to be reading strategies that the proficient bilingual readers utilized to assist in reading comprehension (Jiménez et al., 1996). Neither the proficient English-monolingual readers, as might be expected, or the less proficient bilingual readers used these strategies regularly.

The use of transfer in reading comprehension signifies that students understand that a strategy or reading process learned in one language can be applied to reading in another language. The researchers found that while proficient bilingual readers understood that the processes undertaken to comprehend texts transferred from Spanish to English and vice versa, the less proficient bilingual readers considered their bilingualism an impediment to reading, especially in English. Multiple proficient bilingual readers noted that both word-level strategies such as sounding out unknown vocabulary and more text-level strategies, such as making connections, function across languages.

Translation, another strategy documented in the study by Jiménez and colleagues (Jiménez et al., 1996) was most often demonstrated when the proficient bilingual students, reading in Spanish, came across unknown vocabulary. One student, for example, used translation of the words *agujero negro* to English to understand a Spanish expository text. The significance of the term *agujero negro* was not immediately known

by the student; however, once translated, she understood the term, likely because she had received English instruction on the concept. As with the transfer strategy, this translations strategy suggests that proficient bilingual readers understand that utilizing both languages during reading contributes to comprehension.

A third strategy identified as unique to proficient bilingual readers is the use of cognates (Jiménez et al., 1996). Spanish-English cognates, words similar in spelling and meaning, helped students extract meaning from texts when encountering an unknown vocabulary. Other research findings further explicated the use of cognates in reading comprehension. In a study focusing on L1 vocabulary knowledge, researchers investigated the role of cognates in the relationship between L1 vocabulary knowledge and English reading comprehension (Nagy et al., 1993). They found that while Spanish target vocabulary knowledge did not have a significant main effect in determining outcomes on English reading tests, there was a significant interaction between Spanish vocabulary and cognate identification. Specifically, for students who were skilled at identifying Spanish-English cognates, there was a strong, positive correlation between Spanish vocabulary knowledge and English multiple-choice test performance. In contrast, for students who were not adept at Spanish-English cognate identification, there was a strong, negative relationship between Spanish vocabulary knowledge and English multiple-choice knowledge. This study highlighted that Spanish seems to help students' English reading comprehension most if students know how to strategically access their L1 via cognates.

A follow-up study (Garcia & Nagy, 1993) further analyzed the students' conceptualizations of cognates as well as the relationship of students' understanding of cognates with English text processing. In addition to finding wide variation in the number of cognates students correctly identified, they found that even students who knew both the English and Spanish meaning of a word (as measured by the vocabulary tests), did not always circle the cognate. However, some students were able to effectively rely on orthographic and semantic clues, such as with the cognates *temperature* and *temperatura*, as well as use syntactic parallels between English and Spanish to identify cognates. This reliance on English syntax in cognate recognition suggests that not only can cognate use enhance English reading ability, but also that the inverse holds true- English reading ability can support cognate identification and use.

In contrast to students' ability to use a word's spelling or meaning and the text's structure, morphology was less likely to be taken into account in the cognate circling task. Only nine students, for example, identified naturally as a cognate of *naturalmente*. This finding suggests not only that bilingual students in this age group may not be able to fully draw on cognate relationships, but also that the appropriate use of cognates is a complex endeavor, and that the strategic use of cognates should not be assumed to be automatic for bilinguals.

In summary, the research findings summarized within this theme documented the use of the L1 for reading comprehension and the related understanding that content, processes and strategies transfer across languages when reading (Langer et al., 1990; Jiménez, 1997; Jiménez, et al, 1995). Additionally, comparison of readers by native

language and reading proficiency revealed reading strategies that utilize the first language and are observed primarily in the reading comprehension processes of proficient bilingual readers (Jiménez et al., 1996).

Instruction to Enhance Reading Comprehension

The findings synthesized in the first two themes documented the role of vocabulary knowledge and language transfer in English reading comprehension for ELLs. Those studies do not, however, purport that an understanding of how to use vocabulary knowledge and the L1 for comprehension can be an assumed part of the reading abilities of native Spanish-speaking ELLs. Instead the effective and strategic use of vocabulary and the L1 in reading comprehension likely require purposeful instruction. Several studies that included reading comprehension instruction contribute to an understanding of how to assist ELLs in using vocabulary knowledge, the L1 and other reading strategies for comprehension of English texts.

Carlo et al. (2004) implemented a vocabulary intervention to explore the extent to which improvements in L2 vocabulary relate to improvements in reading comprehension. The intervention, designed for ELLs, but also intended for other students included explicit word instruction, general word-learning strategies such as use of context, morphological clues, polysemy, and cognates. The intervention activities reflected the assumptions that words should be learned in meaningful contexts, that students should have access to texts in their L1 and that multiple skills, such as spelling, pronunciation, morphology and syntax, underlie word knowledge. Results revealed that the intervention group showed greater growth than the control group for target word

mastery, word association, polysemy and reading comprehension (as measured by cloze passages). As the intervention effects were just as large for ELLs as for English monolinguals, this finding suggests that a vocabulary intervention designed for language learners that includes some direct vocabulary instruction along with vocabulary strategy instruction is appropriate for linguistically heterogeneous classrooms. While the intervention provided ELLs access to texts in their L1, the intervention did not include instruction in the use of the L1 as a strategy for comprehending English text. Perhaps including explicit instruction for students in how to strategically use transfer and translation would have further improved reading comprehension outcomes for ELLs.

Another study with an instructional component focused on the use of Reciprocal Teaching (RT) with middle school Hispanic ELLs with learning disabilities (Klinger & Vaughn, 1996). All students received 15 days of instruction in RT and were then assigned to 12 days of either RT with cross-age tutoring or RT with cooperative grouping. Pre- and post-intervention data were collected through reading comprehension measures, strategy interviews, students and researcher daily logs, and participant focus groups. Both groups showed statistically significant average gains, although with wide individual variation, in reading comprehension from pre-test to post-test. The results, however, demonstrated no statistically significant between-group differences for reading comprehension. Without a control group comparison it is difficult to interpret the efficacy of either intervention. Nonetheless, analysis of qualitative data revealed patterns relevant to an understanding of reading comprehension instruction for ELLs.

Specifically, the authors found that initial English reading ability and language

proficiency were important components in understanding which students benefited most from strategy instruction. Students with low decoding skills and limited English oral language proficiency generally tended to benefit less from strategy instruction, suggesting that perhaps there is a minimum English and/or reading proficiency threshold that students would do well to attain prior to reading comprehension instruction. It should be noted, however, that this suggestion seems to contradict work described above (Langer et al. 1990) that noted that ELLs' ability to enact meaning-making reading strategies, such as using hypotheses and knowledge of text genre for comprehension, was a more important determinant of reading comprehension than was English proficiency.

In a final study looking at strategy instruction with middle level ELLs, Jiménez (1997) used a formative experiment consisting of strategy lessons focusing on unknown vocabulary, use of prior knowledge, and formulating questions, and used strategy instruction to understand how five "low-literacy" Latino middle school students responded to cognitive strategy instruction. The students participated in cognitive strategy lessons that utilized culturally relevant texts, and students were encouraged to use their bilingual language abilities (i.e., cognates, translation) to support comprehension. The results revealed that students were generally receptive of the strategy instruction and attempted to implement the strategies. Students also reacted positively to inclusion of their L1 in instruction and took advantage of opportunities to rely on both languages in order to comprehend and demonstrate understanding. Additionally, Jiménez found that the strategy lessons positively influenced students'

metacognitive awareness to include a broader understanding of the purpose of reading as well as the ability to specifically name reading strategies used. While this study looked at more global outcomes, the results reflected the findings of previous work with younger students (e.g., Padrón, 1992) that suggest the potential benefits of cognitive strategy instruction for ELLs.

The results synthesized under this theme bolster previously described research that maintains the importance of vocabulary knowledge in English reading comprehension. The limited number and divergent foci of these instructional studies, however, make difficult extraction of specific components that should be included in reading comprehension instruction for ELLs. The findings do, however, suggest that ELLs may benefit from instruction in vocabulary knowledge and cognitive reading strategies and that instruction focusing on using the L1 as a strategic tool for reading comprehension may be particularly useful.

Discussion

In this research synthesis, I systematically reviewed the research literature between 1988 and 2008 to examine vocabulary knowledge and reading strategy use and instruction as related to reading comprehension for middle level English language learners in U.S. schools. The confines that were a result of using specific criteria to identify studies for this synthesis should be noted. While a systematic search that focused on middle level students is important in understanding what is known about reading comprehension and ELLs, it should not be assumed that research conducted with other age groups is irrelevant to understanding middle school ELLs. Similarly, while this

synthesis included all related research within the past 20 years in top education journals, other sources may exist that include important information in understanding vocabulary development and reading strategies as components of reading comprehension for ELLs. Nonetheless, this synthesis does offer a new knowledge base regarding reading comprehension with ELLs that may inform practice and guide future research efforts.

The importance of vocabulary is evident in the majority of the included studies. Overall, the studies support that vocabulary is a key factor influencing ELLs' ability to comprehend English text and establish that the transfer of vocabulary knowledge from the first language (L1) to the reading in the second language (L2) can occur for native Spanish-speaking ELLs. While less proficient English readers may perceive the L1 as an impediment to English reading comprehension, the L1 can be used strategically by more proficient readers to discern unknown vocabulary and comprehend text. In terms of Spanish-English cognates, there seems to be a reciprocal relationship such that cognate identification and use can augment English reading just as proficiency in English reading can add to students' ability to recognize cognates. The studies also suggest that reading strategies can be transferred across languages and in addition to transfer, the studies document the use of cognates and translation as strategies that proficient native Spanish-speaking bilingual readers use to comprehend texts. Additionally the body of studies, mirroring recent work done with younger students (Hardin, 2001), suggests that students' ability to enact reading strategies, rather than their oral English proficiency, more accurately distinguishes proficient from less proficient readers. In terms of instruction, the studies indicate that ELLs can benefit from instruction that focuses on

vocabulary and reading strategies and that instruction should include culturally relevant texts and native language support.

Limitations of the Studies

Participants. The studies included in this synthesis focus almost exclusively on ELLs whose native language is Spanish. This trend toward study samples wholly represented by native Spanish-speaking students is likely due in part to limited availability of students from other language backgrounds as well as the linguistic resources of second language researchers. As Spanish speakers account for the majority of ELLs in our public schools, research focusing on native Spanish-speaking students should continue. Nonetheless, with immigrant students from varied language backgrounds continuing to enroll in U.S. public schools primarily staffed by monolingual-English teachers, understanding the components of English reading comprehension and how best to teach reading comprehension should be also explored with middle level students from diverse linguistic backgrounds (Roe, 2004).

Similar to experiences noted with reviews of research focusing on second language learners (Fitzgerald, 1995), the labels used to describe the participants (i.e., Spanish-speaking, bilingual, ELLs, etc.) in the studies as well as the measures by which participants were classified into these linguistic labels was problematic in my interpretation of the findings. Few studies described what measures were used to determine the labels connected with participants, and frequently the process consisted of the researchers or school staff making subjective decisions about students' level of bilingualism or proficiency in English. The term bilingual was particularly problematic,

as the word bilingual in the strictest sense implies fully developed oracy and literacy in two languages. In practice, however, the term is used more liberally to mean proficiency in two languages that may not be fully developed or may be developed in an unbalanced manner (full English literacy, for example, but only Spanish oral proficiency). Thus, readers should keep in mind that the findings reported in this synthesis reflect the lack of accuracy in the literature in defining “bilingual” which in turn reflects the linguistically diverse nature of the Hispanic ELL population.

Comprehension measures. The comprehension measures used by researchers to understand participants’ level of reading comprehension should also be noted. Some of the studies, for example, assumed that reading achievement test outcomes could be considered valid proxies for reading comprehension. The widespread use of reading test results to make important educational decisions (i.e., retention, graduation, etc.) dictates that the reading comprehension strategies and skills necessary to succeed on reading achievements tests are important. However, reading achievement tests as a measure of reading comprehension are controversial because these tests tend to oversimplify reading comprehension by ignoring the multidimensional process in which the reader interacts with the specific text to construct meaning, the cultural bias present in some tests, and the context in which the tests are administered (Sweet, 2005). Two studies in this synthesis seemed to support this assertion by documenting that reading comprehension tests underestimated ELLs’ level of reading comprehension (García, 1991; Langer et al, 1990).

Methods. In terms of methodology, many of the studies relied, at least in part, on qualitative approaches in which researchers elicited various types of student generated information to document and understand ELLs' reading processes. Think alouds, for example, have been widely used in comprehension research with English-monolingual readers and are a valuable avenue for exploring the cognitive processes students use while reading (Brown, 2001). This method of data collection, however, may be problematic for use with middle school ELLs. Beyond the issue that children, whether ELLs or not, may not be familiar with the language or experience of metacognition, think alouds may not reflect ELLs' full level of text understanding and meta-cognitive abilities due to limited proficiency in both L1 and L2 academic language. Socio-emotional issues, such as motivation, may also play a pivotal role in middle school ELLs' willingness and ability to articulate their own reading processes. This challenge of extracting a full and accurate understanding of ELLs' reading comprehension processes may be further exacerbated in contrived research contexts in which the naturalistic classroom setting where students normally learn is altered by the actions of outside researchers.

In addition to student think alouds and interviews, case studies focusing on a handful of students were used in some of the studies. The information gleaned from these in-depth studies has been used to conceptualize the reading comprehension processes of bilingual students and document the manner by which the L1 and L2 interact in strategic reading. While this type of rich data has been invaluable in guiding the development of the field, it has meant that most of the studies focusing on reading

comprehension and ELLs have employed relatively small samples. Although the studies are indeed important, this reliance on small scale studies may limit our understanding of reading comprehension and instruction with diverse students in varied contexts. There is little understanding, for example, of how bilingual students' strategic reading abilities differ as a function of type of language program or teachers' reading comprehension instruction. Additionally, because most studies focusing on reading comprehension with ELLs have been executed over short periods of times, changes in students' strategic reading processes over time have not been fully explored. The literature does not provide, for example, clear guidance on how the role of cognates in reading comprehension may change as ELLs develop and move from learning to read at the elementary level, to reading to access content, a skill set more commonly needed at the middle school level, and finally to becoming sophisticated readers across content areas.

Beyond these substantive and methodological issues is the fact that the reading comprehension of ELLs in the U.S. has not received the research attention warranted by the burgeoning numbers of ELLs enrolled in our middle schools and their low achievement levels. That two decades of work from top education journals has produced only nine quality pieces of research focusing on the reading comprehension of middle grades English language learners is alarming. Even more disheartening is the fact that this paucity of research stands in stark contrast to the explosion of research focusing on the reading comprehension of English-monolingual students and students at the elementary levels that has occurred within the past 20 years (Block & Pressley, 2002).

Middle level students are complex research subjects. Middle level students generally receive instruction from multiple teachers who have been trained in varied settings and may provide widely inconsistent instruction across content areas and grade levels. Students entering adolescence must also manage changing emotional states and levels of motivations. ELLs at the middle school level present even more complexities for researchers as they arrive in middle schools with varied educational experiences. While some ELLs have extensive academic preparation in their native language, others have limited native language literacy and some have never before attended formal schooling. Similarly, students' English proficiency levels vary greatly at the middle school level, and ELLs' previous language programming in the U.S. can range from classes delivered only in English to fully bilingual classes. Some middle level students may even have been enrolled in a mix of programs, an unfortunate result of frequent family moves, changing political tides or inappropriate language testing. In addition to complexities with students, middle level teachers commonly view the teaching of reading, including comprehension instruction, as an elementary task that should not need to be addressed in middle school contexts (Pressley & Block, 2002). Researchers focusing on middle level language learners must sort out all of these issues in conducting studies on reading comprehension. This type of complex research situation presents formidable challenges to researchers and may be part of the reason for the dearth of studies focusing on reading comprehension and instruction with middle level ELLs.

Future Research

Future research on reading comprehension must delve into this complicated world of middle level ELLs. While small-scale studies can continue to refine our understanding of the processes by which ELLs comprehend text, we must also initiate studies that use a variety of methods to investigate the reading comprehension of large numbers of ELLs from diverse linguistic and educational backgrounds. Longitudinal studies can add an understanding of how students' strategic abilities change over time as well as document how the L1 and L2 interact in ELLs' strategic reading. For studies focusing on comprehension instruction, more experimental studies should be conducted that explicitly delineate how comprehension instruction should be provided in the classroom. Future research with reading comprehension should, however, take into account lessons learned from studies included in the synthesis such as the importance of students' level of vocabulary knowledge, benefits of inclusion of culturally relevant texts and the challenges in blindly using generic reading strategies applied to language learners without attention to the unique characteristics of ELLs.

Even though the processes students use to comprehend texts should continue to be an area of focus, the most pressing need is for research that examines teachers of ELLs. Teachers have been identified as an important factor in student learning (e.g., Haycock, 1998), yet little is known about how teachers' comprehension instruction may influence ELLs' ability to comprehend English text. While the extant literature provides a picture of bilingual students' reading abilities, it provides little information on how educational practitioners should provide comprehension instruction to ELLs (Roe,

2004). Future studies that look beyond the student level could investigate the extent to which and how reading comprehension is taught to ELLs in naturalistic and varied classroom settings as well as how teachers perceive ELLs' strategic reading abilities. A line of research focusing on the teacher can provide insight into how educators should be prepared to provide effective and appropriate reading comprehension instruction to language learners.

CHAPTER III

EXAMINING HISPANIC MIDDLE SCHOOL STUDENTS' PERCEPTIONS OF
COGNITIVE STRATEGIES USED WHEN READING IN ENGLISH

The term *crisis* has been used frequently to describe the state of reading proficiency for America's adolescents, and in light of this group's underperformance as evidenced in results from state and national level reading assessments (Center on Education Policy, 2007; Lee, Grigg, & Donahue, 2007), the dramatic situation this term conjures may indeed be appropriate. While early reading continues to receive the greatest focus of policy attention as exemplified by the Reading First initiative, the critical state of reading proficiency for adolescents has catalyzed a shift that increasingly focuses on the reading, and especially the reading comprehension, of older students (Pressley, 2004; Snow, Martin, & Berman, 2008).

Although interest in adolescent reading has increased over the past two decades, this attention has been slow to trickle down to adolescents who are also English language learners (ELLs) (Jacobs, 2008; Vaughn & Klinger, 2004). For adolescent ELLs, many of whom are Hispanic and speak Spanish as a first language, comprehending academic English text is a key struggle in finding success in content area classes and on high stakes exams. Results from the reading component of the 2007 National Assessment of Educational Progress (NAEP), for example, revealed that only 14% of Hispanic public school students in the 8th grade are at or above the proficient

level in reading (Lee, Grigg, & Donahue, 2007). Furthermore, of 8th grade ELLs from all racial and ethnic backgrounds, less than 5% are at or above the proficient level in reading and only 16% of former ELLs are considered proficient or advanced in English reading. Without the ability to proficiently read and comprehend complex and cognitively challenging English texts, ELLs are not likely to be successful in middle school and beyond (Biancarosa & Snow, 2006; Kamil, 2003).

Reading Comprehension

Reading comprehension, the intersection of input from text with the reader's input, is central to reading proficiency (Gambrell, Block, & Pressley, 2002; Sadoski & Paivio, 2007). Gambrell, Block, and Pressley (2002) define reading comprehension as "acquiring meaning from written text (p. 4)." Other experts in reading choose to add more specificity to their descriptions of reading comprehension. Sweet and Snow (2003), of the RAND Reading Study Group (RRSG), for example, report that the RRSG defines reading comprehension as a multi-dimensional process involving the reader, the text and the activity during which the reader extracts information from the words read and creates meaning at the same time.

A large body of research supports reading comprehension instruction that includes a systematic and explicit focus on cognitive strategies, and the limited use of cognitive strategies has been suggested as a primary reason for adolescents' difficulties with reading comprehension (Conley, 2008; Deshler, Palincsar, Biancarosa, & Nair, 2007; Graves & Liang, 2008; Snow & Biancarosa, 2003). Nonetheless, the extent and quality of strategic reading comprehension instruction that adolescents receive is unclear

(Block & Pressley, 2002; Pressley, 2004; Vaughn & Klingner, 2004). Although preparation programs increasingly require literacy or reading courses for secondary content area teachers, most of these teachers do not receive adequate training in the process of using cognitively guided instruction to support reading comprehension. The outcome of this limited training is that teachers frequently use cognitive strategies, such as graphic organizers, as a means to teach content, but rarely are teachers trained to delve into the more complex task of explicitly teaching students how to independently utilize cognitive strategies to facilitate text comprehension and content learning (Conley, 2008; Cromley, 2005). This limited training in reading comprehension instruction coupled with the well-documented lack of preparation for secondary teachers' work with second language learners, suggests that adolescent ELLs receive little reading comprehension instruction, especially that which focuses on cognitive reading strategies.

In the next sections, I describe the cognitive view of comprehension, including the use of cognitive and metacognitive strategies to facilitate reading comprehension, and note research conducted in this area with ELLs.

The Cognitive View of Reading Comprehension

One paradigm that can inform the examination of reading comprehension is the cognitive view of learning. The cognitive perspective assumes that individuals are not merely passive receptacles for information, but rather are actively involved in interpreting, transforming, and organizing information, such as written text, from the environment (Chamot & O'Malley, 1996; Pearson & Fielding, 1996). Information-processing theory, the dominant perspective within cognitive theory, describes how

information is processed in human memory and the role of prior knowledge in learning. Approaching reading comprehension through an information-processing perspective means helping students become active readers by learning and applying reading strategies to access known information and understand and integrate new knowledge.

Cognitive Reading Strategies

Cognitive reading strategies, purposeful activities or tactics that assist in comprehending text, include practices such as activating prior knowledge, self-questioning, summarizing, using mental imagery, and making inferences based on text and life experiences (Brown, 1980; Dole, Duffy, Roehler, & Pearson, 1991; Gambrell & Jawitz, 1993; Pressley, Johnson, Symons, McGoldrick, & Kurita, 1989). Afflerbach, Pearson, and Paris (2008) distinguish reading strategies from reading skills by describing reading strategies as “deliberate, goal-directed attempts to control and modify the reader’s efforts to decode text, understand words, and construct meanings of text” (p. 368) while noting that reading skills are automatic actions that result in decoding and comprehension with speed, efficiency, and fluency and usually occur without awareness of the components or control involved.

While not all cognitive reading strategies that readers, especially novice or poor readers, use are considered successful, the appropriate use of cognitive reading strategies enhances students’ reading comprehension (Afflerbach, Pearson, & Paris, 2008; Pressley, 2000), and research supports that good readers actively and automatically utilize a repertoire of these comprehension strategies to understand and remember what they have read (Pressley & Afflerbach, 1995). Less proficient readers, in contrast, tend

to focus on the details of reading such as decoding and fail to see the importance of comprehending the text's message, or reading for meaning (Chamot & El-Dinary, 1999).

While the distinction between successful and less successful strategies is helpful for educators, some researchers have noted that this dichotomy is too simplistic. More specifically, the extent to which a certain strategy is helpful in supporting reading comprehension may depend on the context in which the strategy is used and the reader's ability to execute the strategy in concert with a repertoire of appropriate strategies (Carrell, 1992; Cohen, 1986; Pressley, 2004).

Metacognitive Reading Strategies

While cognitive reading strategies address how learners process text, metacognitive reading strategies have to do with students' ability to plan, monitor and self-evaluate comprehension. Flavell (1978) distinguished between cognitive and metacognitive strategies by noting that cognitive strategies focus specifically on cognitive processes, while metacognitive strategies are procedures meant to monitor cognitive strategies. Readers who effectively utilize metacognition are able to discern when they do not adequately comprehend text and to control the cognitive processes involved in reading comprehension (Baker & Brown, 1984) by applying declarative knowledge (knowledge about strategies), procedural knowledge (knowledge about how to use strategies), and conditional knowledge (knowledge about when and where to employ a strategy) (Carrell, 1998; Paris, Lipson, & Wixson, 1983). While proficient readers constantly monitor understanding, poor readers tend to underutilize

metacognition in reading and are unable to ascertain when comprehension breaks down or recognize what steps need to be taken to facilitate comprehension.

Reading Comprehension Strategies and ELLs

Although some studies have included samples of Hispanic ELLs, the vast majority of research that has examined reading comprehension strategies has focused on English-monolinguals. The relatively small number of studies focusing on Hispanic students at the elementary level has documented differences in reported strategy use by language status (monolingual or bilingual), grade level, and Spanish reading ability (Hardin, 2001; Padrón, Knight, & Waxman, 1986; Padrón 1992). Padrón, Knight, and Waxman (1986), for example, found that bilingual students used fewer reading strategies in terms of number and type than did elementary school English-monolingual students. Padrón (1992), in addition to documenting the benefit of reading strategy instruction for elementary school Hispanic ELLs, reported that younger bilinguals perceived using weaker strategies, such as Thinking About Something Else While Reading, while older bilingual students used more sophisticated reading strategies such as Self-Questioning. These findings are important in light of research that has documented the predictive value of students' reported use of cognitive strategies on reading comprehension outcomes (Padrón & Waxman, 1988).

More recently, researchers have begun to examine reading comprehension strategies with Hispanic ELLs in the middle grades. These studies have addressed bilingual students' reading strategy use and transfer of reading strategies from the first language to English as well as reading strategy instruction with middle level ELLs.

Langer, Bartolomé, Vásquez, and Lucas (1990), for example, sought to understand the reading strategies used by fifth-grade bilingual students to facilitate comprehension. The authors found that students' use of "meaning making" strategies, such as integrating new information with prior understanding and making hypotheses, to be positively related to how well students comprehended text, both in English and in Spanish. Additionally, the findings revealed that the use of reading strategies was more important in distinguishing proficient readers from less proficient readers, regardless of language of text, than was oral English proficiency and that proficient readers used their first language to facilitate reading comprehension in English.

Similar findings were reported by Jiménez, García, and Pearson (1995, 1996) relating to proficient readers' understanding of the additive role of the first language in English reading. Using a sample of sixth- and seventh-grade students that included bilingual students classified as proficient and less proficient English readers, Jiménez and colleagues (1995, 1996) investigated the role of bilingualism and biliteracy in strategic reading and examined differences in students' reading strategy use by language of text and reader characteristics. Results revealed that proficient bilingual readers understood the connections in terms of reading skills and reading strategies between Spanish and English reading and viewed the first language as a resource for English reading. While the proficient readers focused heavily on discerning unknown vocabulary, they did so in a strategic manner and invoked a repertoire of strategies, including uniquely bilingual strategies (use of cognates, transfer, and translation) to extract meaning from the text.

These studies with students in the middle grades revealed the strategic manner by which proficient bilingual student accessed their first language and used reading strategies to facilitate reading comprehension. Subsequent intervention studies confirmed the importance of first language use in reading comprehension instruction (Jiménez, 1997) and documented the influence of strategy instruction on students' metacognitive awareness and the role of initial English reading ability and English language proficiency in understanding which students benefit most from English strategy instruction (Klinger & Vaughn, 1996).

In another intervention study, Olson and Land (2007) undertook an eight-year project in which middle and high school teachers who primarily served Hispanic ELLs were provided with extensive professional development in systematic and explicit strategy instruction in reading and writing. Teachers who received the professional development supported students in developing declarative, procedural, and conditional knowledge and provided students opportunities to practice the use of this knowledge. The results indicated that treatment classrooms significantly outperformed the control group on a variety of measures, including Stanford 9 Reading scores. In addition to the positive outcomes on the standardized reading test, a review of student logs revealed that treatment students recognized the contribution of cognitive strategies in enhancing their reading and writing abilities and attributed improvements in their self-concept toward English reading to the use of those strategies.

To summarize, research focusing on reading comprehension strategies with Hispanic ELLs at the elementary and middle school levels documents students' use of

reading strategies by language, grade level and reading proficiency and reveals the important role of reading strategy instruction and use in successful text comprehension and enhanced reading self-concept. Studies at the middle school level also document the positive role of the first language in the text comprehension of proficient readers and highlight the importance of teacher training in providing cognitive strategy instruction. The next section examines methodological issues in investigating students' reading strategies and details the strengths and limitations of these methods.

Methodological Issues in Investigating Reading Strategies

To understand the reading comprehension strategies that students employ, researchers must attempt to access the cognitive processes that are engaged during reading. The use of verbal self-reports or think alouds, a method utilized to tap student thinking, was first used in problem-solving tasks (Ericsson & Simon, 1984) and has since been widely employed in reading comprehension research. Think alouds ask students to periodically verbalize as many of their thoughts as possible while in the act of reading and thus provide researchers an avenue for uncovering the otherwise hidden knowledge and cognitive processes that students access while reading (Wade, 1990; Jiménez, García & Pearson, 1995). Think alouds are an important tool in understanding student cognitions because they provide extensive and detailed information about individual cases and they are non-directive, meaning students are not mimicking suggested cognitive reading strategies, but rather are reporting on the processes actually used during reading (Loxterman, Beck, & McKeown, 1994).

While think alouds have been widely used in reading comprehension research, this method of collecting information on students' cognitive processes is not without shortcomings. It has been suggested that having to stop and verbalize thought processes may hinder students' ability to comprehend and thus influence the accuracy of data obtained through think alouds (Afflerbach & Johnston, 1984; Bereiter & Bird, 1985), although others (Ericsson & Simon, 1984) have purported that the think aloud procedure does not interfere with thinking. Another issue is verbal facility. While English-monolingual and ELLs alike may not be familiar with the language of metacognition, language issues present a particular challenge for ELLs. Protocols that require students to verbalize thinking may not reflect ELLs' full cognitive abilities and level of text understanding due to limited English language proficiency. Even think alouds conducted in students' native language may not accurately reveal students' potential because many ELLs have been prematurely transferred from native language instruction to English instruction and have not been given the opportunity to develop academic language proficiency in the first language.

A final limitation of the use of verbal think alouds relates to sample size. While think alouds produce rich and detailed information regarding thinking processes, this method requires extensive researcher-student interactions. Because this process is time-consuming, studies utilizing think aloud procedures with ELLs have generally included samples of less than 10 students (e.g., Block, 1986; Jiménez et al., 1995, 1996).

An alternative to verbal think alouds is the self-report instrument. This type of measure is advantageous in research with larger samples because self-report instruments

are convenient to administer simultaneously to multiple students and do not require one-to-one interaction between the researcher and the student. The use of self-report instruments, such as questionnaires, ask students to report in writing the reading strategies used and thus do not require verbalization of thinking processes. For ELLs, self-report instruments enable students to demonstrate the knowledge and cognitive processes used to comprehend text in spite of potential limitations in students' productive language skills or academic language proficiency. Because students are provided an inventory of reading strategies, students do not need to articulate descriptions of the strategies, but rather note the extent to which the strategy is used during reading. The more directed nature of self-report does, however, present some challenges in interpreting the data obtained. A prescriptive list of strategies may underestimate the full range of thinking processes that students use when reading and because students are not in the act of reading while completing self-report instruments, students may mark strategies of which they have declarative knowledge, but cannot actually implement while reading. In spite of these limitations, however, the use of self-report instruments in reading comprehension research allow researchers to easily and conveniently gather information on the reading processes used by large numbers of students (Padrón & Waxman, 1988).

Purpose

The present study seeks to extend understanding of students' reading comprehension by identifying the cognitive processes that Hispanic middle school students use when reading in English. More specifically, this study examines differences

in the type and number of cognitive reading strategies that Hispanic middle school students use and determines differences in reading strategy use by status as an ELL and self-reported reading grades.

Despite the importance of well-developed reading comprehension for middle grades Hispanic ELLs, most reading comprehension studies have focused on English-monolingual students at the elementary level. Several studies with middle grades students have begun to examine the cognitive processes that Hispanic students use in reading comprehension, however, these studies have employed small samples and have utilized one primary method for data collection (e.g., Jiménez, 1995, 1996). While these studies at the middle school level have provided rich descriptions of individual student's thinking processes during reading and have contributed to theory in the field, the results of these studies are limited in their generalizability to other middle school students.

The present study utilizes a self-report instrument and employs a large sample of Hispanic middle school students. The findings from this study identify differences in the reading strategies used by Hispanic middle school students and can provide middle school educators information regarding the types of reading strategies that should be taught in classrooms in which Hispanic students are present. Knowing the type and number of strategies that Hispanic middle school students use while reading English text can help in determining the type of instruction that can be most effective for students.

The following research questions are addressed:

1. What are the cognitive reading strategies that Hispanic middle school students report using?

2. To what extent do Hispanic middle school students report using cognitive reading strategies?
3. Do the type and extent of cognitive reading strategies that Hispanic middle school students report using differ by status as an ELL?
4. Do the type and extent of cognitive reading strategies that Hispanic middle school students report using differ by self-reported reading grade?

Methods

Participants

A secondary de-identified data set was used. Data were collected from students who were enrolled in middle schools in a major urban city in the south central region of the United States. The district was purposively selected due to national and state recognition for effectively educating predominantly minority students from economically-disadvantaged circumstances. Based upon state-wide criteria, one “exemplary,” one “recognized,” and one “acceptable” middle level school from the district were randomly chosen to be included in the data set. An “unacceptable” middle school was not chosen because no middle schools in the district had received this rating. The total student population in each of the middle schools ranged from approximately 900 students to about 1050 total students.

About 400 seventh- and eighth-grade students from each of the three middle schools were randomly selected to participate in the study, for a total sample of nearly 1,200 middle school students. Approximately 50% of the students were in the seventh-grade and 50% were eighth-grade students, and the students were nearly evenly divided

by gender. About 61% of the students were Hispanic, about 25% were African American, nearly 6% were White, and 8% of the students were from other ethnic groups. For the present study, only data from the Hispanic students were utilized making a sample of approximately 850 students. Of the Hispanic students, approximately 50% ($n = 426$) were considered ELLs while the remaining 50% ($n = 422$) were non-ELLs. Students were considered ELLs if they were currently enrolled or had been previously enrolled in ESL or bilingual programs. Thus, the ELL group included both present and former ELLs. Several of the cases from both groups included missing values.

Instruments

The Reading Strategies Questionnaire (RSQ) was used to gather students' perceptions of their own reading strategy use. The RSQ (Padrón & Waxman, 1988) was adapted from Hahn (1984) and Paris and Myers (1981). The RSQ is a 20-item, Likert-type questionnaire on which students indicate the extent to which they use the described strategy by responding either (a) Never, (B) Some of the time, (C) Often, or (D) Always. The RSQ includes items targeting students' perceptions of the cognitive reading strategies used during English reading.

The following 11 strategies included on the RSQ have not been associated with successful reading comprehension (Chou Hare & Smith, 1982; Hahn, 1984; Knight, 1987; Padrón, 1985) or have not been examined systematically to determine their relationship to reading comprehension: (a) Re-reading The Story Upon Completion Of The First Reading, (b) Remembering The Interesting Parts And Skip Others, (c) Skip Parts Of The Story That I Don't Understand, (d) Read The Story As Fast As I Can, (e)

Say The Main Ideas Over And Over, and (f) Say The Words In The Story Over And Over Again, (g) Read Slowly And Carefully, (h) Think About What I Am Reading, (i) Look For Things That Are Different In The Story, (j) Ask A Friend For Help If I Don't Understand, and (k) Look Up A Word I Don't Know In The Dictionary.

The following nine strategies on the RSQ have been designated by research and theoretical literature (Knight, 1987; Morrow, 1985; Olshavsky, 1976-77; Singer & Donlan, 1982; Weinstein & Mayer, 1986) as successful strategies and to be positively related to students' achievement: (a) Keep A Picture Of The Story In My Mind, (b) Ask Questions About Parts That I Don't Understand, (c) Retell the Story In My Own Words, (d) Ask Myself Questions, (e) Think About What's Going To Happen Next, (f) Make Self To Text Connections, (g) Imagine A Movie In My Mind, (h) Check To See If I Remember, and (i) Underline Important Parts.

Results

Table B-1 reports the overall means and standard deviations for the 20 RSQ items. The results indicated that the most frequently cited strategies were (a) Keep A Picture of The Story In My Mind ($M = 2.96$, $SD = 1.02$), (b) Think About What I Am Reading ($M = 2.87$, $SD = 0.96$), (c) Read Slowly And Carefully ($M = 2.74$, $SD = 0.92$), and (d) Think About What's Going To Happen Next ($M = 2.68$, $SD = 0.94$). The least cited strategies were (a) Repeat Main Ideas ($M = 1.80$, $SD = 0.83$), (b) Repeat The Words In The Story ($M = 1.80$, $SD = 0.87$), (c) Read As Fast As I Can ($M = 1.78$, $SD = 0.87$), and (d) Look Up Words In The Dictionary ($M = 1.75$, $SD = 0.85$). The majority of the mean scores of the successful strategies were between 2 and 3, indicating that

students reported using these strategies some of the time or often (on a 4-point, Likert-type scale, with “4” representing the highest possible value and “1” representing the lowest possible value). The majority of the mean scores of the less successful strategies were generally close to 2, suggesting that students reported using these strategies only some of the time. The standard deviations for both the successful strategies and the less successful strategies, however, indicated a great deal of variance in the way students responded to each item.

The multivariate analysis of variance results indicated an overall significant effect for group (Wilk’s lambda = .954, $F(20, 765) = 1.827, p < .05$) and for reading grade (Wilk’s lambda = .897, $F(60, 2283) = 1.413, p < .05$). There was no significant interaction. Follow-up univariate F-tests and then Scheffe multiple comparison post hoc tests were used to determine the location of the differences.

Table B-2 reports the t-test results and the means and standards deviations for group. The results indicated that Hispanic ELLs perceived using the less successful strategies, Skip Parts I Don’t Understand and Look Up Words In The Dictionary statistically significantly more often than Hispanic non-ELLs ($t = 1.918; t = 2.118$). It should be pointed out, however, that the magnitude of these differences is not very large. The effect sizes of the comparisons between ELLs and non-ELLs for the strategies Skip Parts I Don’t Understand and Look Up Words In The Dictionary were 0.12 and 0.14 respectively, both of which are small, positive effect sizes.

Table B-3 reports the ANOVA results, post hoc results, and the means and standard deviations for reading grade. The results indicated that students who reported

receiving mostly A's and mostly B's in reading demonstrated statistically significantly higher perceptions of the successful strategy Keep A Picture Of The Story In My Mind than did students who reported receiving mostly C's, D's and below in reading ($F = 6.20, p < .001$). Students who reported receiving mostly A's also demonstrated significantly higher perceptions of the successful strategy Imagine A Movie In My Mind than did students who reported receiving mostly C's and D's ($F = 4.80, p < .01$), and Mostly A students demonstrated significantly higher perceptions of the successful strategy Think About What's Going To Happen Next than did Mostly D and Below students ($F = 3.19, p < .05$). Alternatively, for the less successful strategy Read As Fast As I Can, Mostly D and Below students reported significantly higher perceptions than Mostly A students ($F = 2.89, p < .05$). In contrast to the trend of higher achieving students reporting higher use of successful strategies and lower use of less successful strategies than lower achieving students, Mostly A students cited significantly higher perceptions of the less successful strategy Re-read Story than did Mostly C students ($F = 3.80, p < .05$). Students who reported mostly B's and D's and Below, however, did not differ significantly from either Mostly A students. Mostly A students also reported significantly higher perceptions than lower achieving students for the less successful strategies Think About What I Am Reading and Look For Things That Are Different ($F = 6.48, p < .001; F = 3.67, p < .05$).

Discussion

The results of this study indicate that Hispanic middle school students perceived using a variety of cognitive reading strategies. Also, students indicated that they are

using the majority of the strategies only some of the time. When examining the type of cognitive reading strategies that students are using, the most frequently cited strategies included both successful and less successful strategies, suggesting that students are not consistently or exclusively using successful or strong reading strategies when reading in English.

In comparing ELLs' and non-ELLs' perceptions of their use of cognitive reading strategies, the results from the present study are similar to studies with elementary level students that found significant differences between ELLs and non-ELLs for perceived use of cognitive reading strategies. Studies examining the use of cognitive reading strategies by elementary school ELLs found that English-monolingual students reported overall using significantly more strategies than ELLs with significant differences in the extent of use for three successful strategies (Knight, Padrón, & Waxman, 1985; Padrón, Knight, & Waxman, 1986). Additionally, several of the successful strategies included in these elementary level studies had means of 0 for the ELL group, meaning that no ELL reported using the strategy. In the present study, while ELLs and non-ELLs reported significant differences in reading strategy use overall, ELLs and non-ELLs differed significantly on the extent of use for only two RSQ items. The strategies Look Up Words In The Dictionary and Skip Part I Don't Understand are less successful strategies that ELLs reported using more often than non-ELLs. While ELLs reported using the two less successful strategies to a greater extent than non-ELLs, the means for ELLs were close to 2, indicating that ELLs used the strategies only some of the time.

ELLs reported using Look Up Words In The Dictionary significantly more often than non-ELLs, a strategy that has been identified in previous research as less successful. Although some researchers consider dictionary-based word learning cognitively disruptive because searching for a word in a dictionary interrupts the reading process (Rhoder & Huerster, 2002), the use of use of the dictionary as a strategy for deciphering unknown vocabulary could potentially contribute positively to ELLs' efforts to comprehend English text. Jiménez and colleagues (1995, 1996) found, for example, that ELLs who are proficient English readers tend to hold a logocentric, or word-focused, approach to reading in contrast to proficient English-monolingual readers who rarely focus on unknown vocabulary while reading in English. As second language learners, ELLs encounter more total unknown words and are less able to use contextual and linguistic clues to decipher unfamiliar vocabulary than monolingual-English speakers (Nagy, 1997). ELLs who are proficient English readers strategically approach unknown vocabulary as means of comprehending English texts and in fact use other strategies, such as questioning, in the service of interpreting the meaning of unknown vocabulary (Jiménez et al., 1995, 1996). This could also be the case for the ELLs in the present study. Perhaps ELLs' more frequent use of Look Up Words In The Dictionary strategy does not suggest a bottom up view of reading, but rather indicates that students are using the dictionary as a tool to understand unknown vocabulary and, in turn, to construct meaning while reading in English.

ELLs also reported using the less successful strategy, Skip Parts That I Don't Understand significantly more often than non-ELLs. The more frequent use of this

strategy by ELLs could also potentially be related to this group of students' status as second language learners. ELLs could be skipping more parts of English texts than non-ELLs due to a lack of comprehension related to the large amounts of unknown vocabulary that ELLs must decipher. Especially for ELLs who are less proficient English readers and do not hold a strategic approach to using vocabulary for comprehension, the strategy of Skip Parts I Don't Understand may appear as an efficient, albeit ineffective, reading strategy.

While Hispanic ELLs perceived using two less successful cognitive reading strategies significantly more often than Hispanic non-ELLs, overall the two groups generally reported using cognitive reading strategies to a similar extent. That is, overall, ELL and non-ELL Hispanic students reported using cognitive reading strategies some of the time. There has been much debate about the benefits of bilingual and ESL programs focusing on whether these programs really make a difference in terms of students' ability to perform at the same level as their English-speaking counterparts. The finding that Hispanic ELLs and non-ELLs reported similar cognitive strategy use suggests that the ELLs' participation in ESL and/or bilingual programs has, at the very least, not had a negative effect on their reported use of cognitive reading strategies. Nonetheless, the lack of use of cognitive reading strategies by both groups is of great concern. Future research needs to investigate what differences in reading strategy use exist between middle school native English-monolingual students and Hispanic ELLs and non-ELLs and to examine how these differences contribute to the reading achievement gap.

The finding that there are fewer differences in reading strategy use between ELLs and non-ELLs and that ELLs demonstrated overall higher use of cognitive strategies at the middle school level than at the elementary level could be related to the fact that the majority of middle school ELLs have had more time for academic English language development than have younger ELLs. Cummins (1981) has suggested, for example, that while young language learners may be able to learn the context-embedded surface features of the second language quickly, language learners may take at least five to seven years to become proficient in the more formal and cognitively demanding language such as that which is used in academic texts. Cummins further asserts that language learners can transfer cognitive academic language proficiency from the first language to the subsequent languages. Extending this line of reasoning would thus suggest that a middle school ELL who has had either native academic language development or extensive time (i.e., five plus years) in order to develop academic English language proficiency would have a potential advantage in reading academic English text over a younger student. This could be the case in the present study in which middle school ELLs reported using more cognitive reading strategies than did young ELLs in earlier research (Knight, Padrón, & Waxman, 1985; Padrón, Knight, & Waxman, 1986). Without specific information on the types of language programs in which ELLs were enrolled and the length of time that ELLs participated in those programs, however, I cannot be certain of this assertion. To address this issue, future research needs to investigate how middle school students' cognitive reading strategy use differs by language proficiency level, language program, and age.

While few overall significant differences were found between the ELLs and non-ELLs in the present study, Hispanic middle school students demonstrated differences on eight reading strategies as a function of self-reported reading grade. Similar to previous research with ELLs (Padrón, & Waxman, 1988) higher achieving students generally used more successful strategies than lower achieving students. In the present study, however, higher achieving students also reported using less successful reading strategies. The strategy, Re-reading, for example, is identified as less successful in the RSQ. In the present study, however, higher achieving students reported using the strategy more often than some lower achieving students. The use of less successful strategies by higher achieving students could be due, in part, to the conditions in which the students use the strategy. Re-reading a story could be considered weak (i.e., less successful) if students simply re-read the words in the story and do not make any additional efforts to construct meaning. In contrast, re-reading a story could be successful and contribute to comprehension if students re-read the story in order to extract further meaning or confirm understanding. Further information, such as interview or think aloud data is needed, however, to ascertain the reasoning behind higher achieving students' use of negative reading strategies.

Pedagogical Implications

This study provides middle level educators information on the extent to which Hispanic middle school students report using successful and less successful cognitive reading strategies. The findings from the present study indicate that students do not use successful cognitive reading strategies often. These findings provide teachers with

information on how reading instruction can be designed to increase Hispanic students' use of successful strategies and provide students with the conditional knowledge to effectively use the strategies in diverse reading contexts. Similarly, teachers can work to help students eliminate the use of the less successful strategies that may hinder English reading comprehension. In addition to using the results from the present study to inform reading instruction, teachers can use the RSQ instrument in their unique classroom contexts as an initial screening tool to determine the cognitive reading strategies that individual students use and to plan and individualize instruction accordingly. Pinpointing the areas where students need reading strategy instruction can enhance students' reading comprehension and may subsequently contribute to academic achievement in reading of Hispanic students.

Limitations of the Study and Suggestions for Further Research

While the present study provides important information on differences in cognitive reading strategy use reported amongst Hispanic middle school students, the limitations of the study should be noted. The RSQ is a self-report instrument that measures students' declarative knowledge of reading strategies. Thus, we cannot be certain that students utilize effectively the strategies that they report using. Additionally, there could potentially be other reading strategies, such as those suggested by Jiménez and colleagues (1995, 1996), that Hispanic middle school students use that are not included on the RSQ. For example, there may be a need to include strategies that address language issues that are particularly important to this student population. It may be that Hispanic students use strategies such as translating from their first language to their

second language in order to comprehend text. The use of these types of strategies needs to be studied in future research. Finally, students in the present study were categorized as ELL or non-ELL. This distinction could be too simplistic. Knowing ELLs' level of English proficiency and the type (i.e., bilingual programs, ESL) and number of years that students participated in language programs could enhance our understanding of differences in the reading strategies that students reported using.

In the present study, I compared Hispanic ELLs with Hispanic non-ELLs, however, future research should also include Anglo English-monolinguals as was done in earlier studies (e.g., Jiménez et al., 1995; Padrón et al., 1986). Inclusion of Anglo English-monolinguals is important because using only Hispanic English-monolinguals as a comparison group does not acknowledge the issues apart from language that all Hispanic students confront. Issues such as schools with high concentrations of poverty, lack of qualified teachers, discrimination in schooling and ineffective instructional practices may affect the reading instruction that Hispanic students receive and ultimately the sophistication of the reading strategies that they are able to access in order to comprehend English text (Waxman, Padrón, & García, 2007)

In addition to expanding the comparison groups used, researchers planning to use the RSQ to determine Hispanic students' reading strategy use should also consider making modifications to the instrument. In light of research that has documented the reading strategies of native Spanish-speaking ELLs (Jimenez et al, 1995, 1996), adding items focusing on students' use of Spanish when reading in English could strengthen the instrument. Specifically, items that address the use of cognates, transfer, translation as

well as items that examine the extent to which students' hold a logocentric view of reading would be beneficial. In addition to adding items specific to Spanish-speaking students, researchers could enhance the information gleaned from the RSQ by asking students to read an English text and then think about the specific English text when completing the instrument, such as was done with previous versions of the instrument (Knight, 1992). Inclusion of an English text would allow researchers to better understand how the type and difficulty level of the text influence students' reading strategy use and the text could be the focus of follow-up interview or think aloud questions.

Middle level students typically receive departmentalized instruction and must be able to comprehend English texts not only in the language arts classroom but also in content area classes such as science, mathematics, and social studies. Future research should investigate the cognitive reading strategies that Hispanic ELLs utilize during content area reading. Studies could examine, for example, the type and number of cognitive reading strategies that Hispanic ELLs use when reading non-fiction science texts and could investigate if certain strategies are unique to the science texts. Content area-specific research should also begin to look at the role of teachers and instruction in middle school Hispanic ELLs' reading strategy use. Teachers have been found to be an important factor that impacts students learning, yet little is known about how teachers' instruction may influence Hispanic ELLs' knowledge and use of cognitive reading strategies, especially in the content area classroom. Future research including experimental studies could determine effective ways to teach subject-specific reading strategies to Hispanic ELLs at the middle school level. This line of research could assist

middle level content area educators by providing specific information on how to enhance Hispanic ELLs English reading comprehension through content area instruction.

CHAPTER IV

EVALUATING THE EXTENT TO WHICH A STATE-WIDE PROFESSIONAL DEVELOPMENT PROGRAM ADDRESSED THE NEEDS OF TEACHERS OF ENGLISH LANGUAGE LEARNERS

Professional development has been offered as an essential component for improving teaching and learning in U.S. classrooms, and recent reform initiatives have increased the attention given to developing and implementing effective, research-based professional development (Elmore, 2002; Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009). Research suggests that teacher professional development, especially that which focuses on student learning within a specific content matter, can be effective in improving teachers' classroom practice (Blank, de las Alas, & Smith, 2008; Carpenter, Fennema, Peterson, Chiang, & Loef, 1989; Cobb et al., 1991; Cohen & Hill, 2001), and teachers report feeling best prepared to teach subject areas in which they have received the most professional development (Parsad, Lewis, Farris, & Greene, 2001).

In spite of what is known about the importance of professional development in enhancing teacher quality, however, teachers do not receive adequate professional development (Borko, 2004; Fishman, Marx, Best, & Tal, 2003). A recent report, for example, noted that in most content areas, teachers spend less than two days per year in professional development and by and large, these professional development activities are short-term training that does not include a follow-up component to support and monitor

teachers' classroom implementation of training content (Wei et al., 2009). There is widespread consensus in the research community that the majority of this limited professional development is ineffective (Ball & Cohen, 1999; Little, 1999), and results from the 2003-2004 Schools and Staffing Survey (SASS) reflect this consensus with only about half of participating teachers reporting that the professional development they received was useful (Wei et al., 2009).

While teacher professional development in general is limited, training for teachers who serve English language learners (ELLs) is even more inadequate. Even though 41% of U.S. teachers have at least one ELL in their classroom (Southeast Center for Teaching Quality, 2003), 2003-2004 SASS data documented that in the three years preceding the survey, less than a third of U.S. teachers reported receiving eight or more hours of professional development focused on how to teach ELLs (Wei et al., 2009). Similarly, in an earlier national survey of classroom teachers, 57% of all teachers responded that they either "very much needed" or "somewhat needed" more information on helping students with limited English proficiency achieve to high standards (Alexander, Heaviside, & Farris, 1999).

Purpose

Professional development has a critical role in successful educational reform (Dilworth & Imig, 1995), and evaluating existing professional development activities is an important step in working to improve the quality and effectiveness of future professional development efforts. There have been few studies that have evaluated the quality, both in terms of process and content, of professional development, especially for

teachers of ELLs. The professional development specific to teachers who work with ELLs must be addressed in order for improvements in the education of ELLs to occur (Jiménez & Barrera, 2000; Téllez & Waxman, 2006). In light of the presence of increasing numbers of ELLs in U.S. schools, the low achievement levels demonstrated by these same students, and teachers' inadequate training specific to working with ELLs, it is important to understand the extent to which content area specific professional development acknowledges the unique academic and linguistic needs of ELLs and provides suggestions for curricular and instructional practices that are appropriate for use with ELLs. The purpose of this study is to evaluate the alignment between a state-wide mathematics professional development program and standards for professional development for all teachers as well as to examine the extent to which the mathematics professional development program addressed the specific needs of teachers who instruct ELLs. While examining the extent to which the professional development programs met the needs of teachers of other subgroups of students, such as special education or gifted students, is important, it is beyond the scope of the present study.

Review of the Literature

Professional Development

One explanation for both the inadequate amount of time teachers spend in professional development and teachers' perception that professional development has little effect on teaching relates to the type of professional development that historically has been offered to educators. While other more complex descriptions of professional development strategies and categories are important in understanding variations in

professional development (Loucks-Horsely, Hewson, Love, & Stiles, 1998; Loucks-Horsely, Love, Stiles, Mundry, & Hewson, 2003), an earlier description of professional development processes offered by Sparks and Loucks-Horsley (1989) is well-suited to generally distinguish between the types of professional development that teachers receive. Sparks and Loucks-Horsely (1989) describe five models of professional development: (a) individually guided, (teacher develops goals and chooses activities to meet the goals), (b) observation/assessment (teacher is provided classroom data and feedback), (c) development improvement process, (teacher assists in program and curriculum development in the context of school-wide improvement efforts), (d) training (teachers learn through direct and short-term instruction), and (e) inquiry (teachers engage in the cyclical nature of action research in which an area of classroom practice is identified, data is collected and analyzed, and practice is modified based on the findings).

The training model, which many teachers believe is synonymous with the broader term professional development, is the mostly widely executed form of staff development. Although this model is commonplace in professional development possibly due to the ease, simplicity, and lower cost associated with implementation, the training model for professional development has been criticized for its short-term and decontextualized nature. So called “one-shot” trainings fail to capitalize on what is known about adult learners and fall short of addressing the student, instructional, and contextual complexities that teachers face in the classroom (Darling-Hammond & McLaughlin, 1995; Hawley & Valli, 1999; Knight & Wiseman, 2006).

Standards for professional development. Multiple sets of guidelines for effective professional development have been offered by various governmental, professional, and research groups (see e.g., Center for Teaching Quality, nd; NCLB, 2002; National Staff Development Council [NSDC], 2001) and supported to varying degrees by research in the field (Desimone, Porter, Garet, Yoon, & Birman, 2002; Garet, Porter, Desimone, Birman, & Yoon, 2001). While varied in form and source, most guidelines include some core elements that are identified as best practices for professional development in the literature. These common themes include the importance of school-based, collaborative and content specific professional development activities, heavy involvement by teachers in planning and selecting professional development goals and activities, long-term and continuous classroom support, and finally, ongoing evaluation of the impact of professional development.

Requirements for high quality professional development, for example, were mandated as a part of No Child Left Behind (NCLB). Title IX of NCLB states that professional development must include elements such as a focus on content knowledge, explicit connections to state academic and achievement standards, and promotion of teacher understanding of research based instructional strategies. Even though the inclusion of NCLB requirements for professional development have been applauded for the increased attention given to the quality of professional development activities, NCLB's definition of high quality professional development has also been criticized as being too narrowly focused on subject matter content (Hirsh, 2006). Specifically, critics have noted that under NCLB's requirements for professional development, little

attention is paid to the process of how teachers learn best (i.e., collaborative work, specific links to own classroom and students) or the context in which teachers work (i.e., allocation of resources, school leadership).

In an effort to approach professional development in a more holistic manner the NSDC, for example, breaks 11 standards into three areas of focus: context standards, process standards, and content standards (NSDC, 2001). The context standards suggest that professional development should include learning communities with goals aligned with the school and district, the presence of effective school- and district-level leaders who can drive ongoing improvement in instruction, adequate resources to foster adult learning and collaboration. The second group of standards, those focusing on process, suggests the use of data for decision making, ongoing impact evaluation, application of research to practice, appropriate learning strategies to research goals, based on what is known about human learning, and empowers teachers to work collaboratively. Finally, the content standards include the importance of preparing teachers to create equitable learning environments for all students, to improve the quality of teaching by deepening knowledge of content matter, pedagogy and assessment, and to include families and other stakeholders in education. While the sets of recommendations offered by NCLB and NSDC include some common elements, the differences in terms of focus are important to note. The NSDC guidelines include a heavier focus on those elements that critics assert are missing from NCLB mandates. In particular, NSDC includes components that address the context in which teachers work and the processes by which teacher learn.

Professional development for teachers of ELLs. While professional development that meets the needs of teachers of ELLs must include the process and content components noted above for general educators, such as teacher-planned subject-specific activities that are ongoing and occur in the classroom context, teachers of second language learners must also receive professional development that provides them the knowledge necessary to successfully work with ELLs. Menken and Antúnez (2001), for example, suggested three broad areas of knowledge that teachers of ELLs must master: pedagogical knowledge specific to ELLs, linguistic knowledge, and knowledge specific to cultural and linguistic diversity. These three areas of knowledge could be used to guide the content of professional development for teachers of ELLs. Other suggestions for professional development include training teachers using the same standards that teachers are encouraged to use with language learners (i.e., joint productivity, connections to real life applications, sustained and continuous problem solving) (Rueda, 1998), using activities to improve teachers' sense of competence in working with ELLs, and focusing on content area instruction to develop language (Gándara & Maxwell-Jolly, 2006).

Although a focus on language and culture is an important component in providing professional development to teachers of ELLs, little is known about how best to provide teachers this type of professional development or how professional development influences teacher and student classroom outcomes (Knight & Wiseman, 2005, 2006). In a synthesis of research looking at research on professional development and culturally and linguistically diverse students, for example, only 19 studies were

found on the topic (Knight & Wiseman, 2006). While some of the professional development activities reflected best practices in terms of professional development models (i.e., a collaborative inquiry approach in contrast to the more common training model) and were delivered in the context of research-based instructional programs (i.e., Cognitively Guided Instruction; Instructional Conversations), the studies in general provided limited guidance on how to provide teachers of diverse students the necessary knowledge and skills to be successful. Additionally, the studies overall did not demonstrate the impact of the various professional development activities on teachers' classroom behavior or students' classroom performance (Knight & Wiseman, 2005, 2006).

Mathematics and ELLs

Considerations in mathematics professional development for teachers of ELLs.

Mathematics reform has had an impact on the education of ELLs and the teachers who instruct them. Implementing the inquiry-based mathematics instruction dictated by current reform efforts is an especially complex endeavor in contexts in which students are learning a second language. Not only are teachers of ELLs faced with helping students to master complex mathematical concepts and the advanced discourse that accompanies them, but teachers are challenged to do so while simultaneously providing second language learners appropriate English language development opportunities. Even though the National Council of Teachers of Mathematics ([NCTM], 2002) states that “English proficiency and cultural differences must not be a barrier to full participation” (p. 1), ELLs by in large do not receive the type of mathematics instruction that would

allow them to master both advanced mathematics expertise and English language proficiency. Misconceptions on the part of educators that equate English language proficiency with mathematical potential prevent ELLs from developing mathematical abilities, and even well-meaning elementary and secondary teachers simply do not have the necessary training to effectively teach mathematical content while providing English language development. This widespread misunderstanding of ELLs in the mathematics classroom is a problem highlighted in the literature addressing ELLs and mathematics (Gutiérrez, 2002; Khisty & Morales, 2004; Secada, 1992).

Perspectives on teaching mathematics to ELLs. In NCTM's 2007 Yearbook, *The Learning of Mathematics*, Bay-Williams and Herrera suggest three perspectives that can be adopted in approaching instruction for ELLs in the mathematics classroom. The first view, noted above, assumes mathematics to be a universal language in which teachers focus on symbols and limit language use and contextualization of mathematical problems (Khisty & Morales, 2004). This view of providing mathematics instruction to ELLs has often been adopted by mathematics teachers but is in stark contrast to the process-oriented and discourse rich instruction mandated by mathematics reform (Moschkovich, 1999b). A second perspective centers on providing "good teaching" (i.e. process-oriented instruction that is in line with the standards reform movement) that includes support for second language learners in the form of hands-on learning, discussions and real life applications of mathematics concepts. While this second view provides ELLs some access to discourse and opportunities to interact with mathematical concepts, it also assumes that mathematics is a neutral subject, that is, culture and

language free, and that students' cultural background and linguistic abilities do not necessarily need to be considered in mathematics instruction for ELLs (Gutstein, Lipman, Hernández, & de los Reyes, 1997; Kitchen, 2005). This assumption communicates a one size fits all approach in which good teaching is good teaching and fails to capitalize on the unique sociocultural and psycholinguistic backgrounds of ELLs. This perspective does not systematically address the language development and cultural resources of these students.

Building on the second view, a third perspective described by Bay-Williams and Herrera (2007) and offered elsewhere by others (i.e., Moschkovich, 2007) assumes a sociocultural perspective in which mathematics instruction cannot and should not occur within a vacuum. Instead, instruction is delivered within a contextualized learning environment in which mathematics content cannot be separated from the linguistic, social, and cultural experiences of the learner. This type of instruction is, as offered by mathematics reform, process-oriented, but is distinguished by a purposeful focus on developing language. Dale and Cuevas (1995) highlight the important role of students' language in learning mathematics: "Language works as a mediator for mathematical thinking and metacognition. Whether the thinking defines the language or the language defines the thinking remains to be answered. Probably both occur. The important point is that mathematical thinking, mediated by linguistic processes, is a prerequisite for mathematics achievement" (p. 50). Instruction emanating from this approach to mathematics teaching takes place in a highly interactive classroom in which communication beyond mere vocabulary development is the vehicle for instruction and

includes the use of students' native language when possible (Khisty, 1995; Moschkovich, 1999a).

With its multi-faceted focus on mathematics content, language, and the sociocultural context in which education occurs, the third approach is a quality approach to instructing ELLs in the mathematics classroom. However, as with the general mathematics reforms, it is unclear the extent to which teachers are willing and able to appropriately and effectively provide mathematics instruction of this quality to ELLs (Civil, 2006; Rodríguez, 2005). Just as mathematics teachers have not received the tools for working with students in this reform context, teachers of ELLs, who have an even more difficult challenge of teaching both mathematics content and developing language, have not been provided specific and appropriate preparation and guidance to promote mathematical success amongst their students.

Instructional practices for teaching mathematics to ELLs. Bay-Williams and Herrera's third perspective is reflected in several general instructional practices noted in the literature addressing mathematics instruction with ELLs. Calls for the use of students' native language for instruction or support are found across the research focusing on second language learners (Cummins, 1993; Dulay & Burt, 1978). Instruction that uses students' heritage language to some extent, even for monolingual-English speaking teachers, has also been highlighted as an important practice in mathematics classrooms (Coggins, Kravin, Coates, & Carroll, 2007; Garrison & Mora, 1999; Khisty, 1995; Moschkovich, 1999a, 2002). In addition to the use of students' native language, mathematics teachers should make connections to and focus on language learning, as

with instruction for ELLs in other content areas (Echevarria & Graves, 2000), and mathematics should be used as a tool to teach language to ELLs (Anstrom, 1997; Buchanan & Helman, 1993; Khisty, 2002).

The research literature also suggests that teachers focus on mathematical communication, that is, the deep discourse that transcends vocabulary lists and key points (Khisty, 1995; Leiva, 2006; Moschkovich, 1999b, 2002, 2006) and finally that teachers utilize culturally-relevant and student-centered-real life applications in mathematics instruction (Brenner, 1998; Celdon-Pattichis, 2004; Dale & Cuevas, 1992; Secada, 1992). Any of these practices alone should not be considered a guaranteed “fix” for instruction with ELLs. Instead, when these practices are utilized in the context of instruction that includes a rich, multi-faceted focus on mathematics content, language, and the sociocultural milieu in which instruction occurs, teachers of ELLs can move towards realizing the goals of the mathematics reform movement.

Research Questions

The mathematics professional development program that was examined in this study was sound in terms of mathematics content and mathematics pedagogy. The trainings were based on NCTM standards and were developed by scholars and practitioners with extensive expertise in mathematics education. Because this program was of high quality in terms of pedagogical and content knowledge specific to mathematics, the focus for the present study was on the process utilized to train the teachers as well as the specific content relevant to ELLs that was included in the professional development activities.

The study sought to examine both the process and the content of the professional development program by answering the following research questions:

1. To what extent were the professional development activities aligned with standards for professional development?
2. What types of research-based instructional practices specific to teaching mathematics to ELLs were included and to what extent were those instructional practices utilized in the professional development?

Methods

Participants

The study was conducted in a large state in the south central region of the U.S. where nearly 20% of the students are ELLs (Lara-Alecio, Galloway, Mahadevan, Mason, et al, 2005). Approximately 500 participants attended a two-day professional development program in mathematics that was held throughout the state. The majority of participants reported their job title as mathematics specialists, consultants or coaches; very few participants were classroom teachers. Participants' ($n = 531$) mean average experience in mathematics was 17 years, and about 75% of participants held a master's degree, while the remaining 25% reported having a bachelor's degree.

Professional Development Program

The program used a training-of-trainers model in that those who attended the program would eventually provide training as professional development for classroom teachers in mathematics throughout the state. The professional development module

used the 5E instructional model (Bybee, 1997) to expand and improve upon teachers' abilities to positively influence student achievement by appropriately and effectively connecting state mathematics standards to classroom practices. The mathematics content for each module focused on concepts highlighted in the state mathematics standards, and the professional development program was presented by a number of mathematics content specialists from regional education service centers throughout the state.

Procedures

A mixed-methods design was used in the study. Systematic observations of all training sessions were conducted, and formative and summative surveys assessing participants' perceptions of the training were collected from all participants. Extensive field notes from ethnographic observations were also included. Finally, there was a systematic review of the curriculum and other workshop materials. Four experienced university faculty and doctoral students from a College of Education in a major research university were responsible for data collection. All four had extensive training on the instruments during the pilot professional development sessions.

Data Collection

Systematic observations. Systematic observations of the 15 training sessions were conducted. Each 16-hour workshop consisted of four 3-hour sessions (morning day 1, afternoon day 1, morning day 2, afternoon day 2). Grounded in prior research in professional development (Hill, 2004; Hill & Ball, 2004; Saxe, Gearhardt, & Nasir, 2001) and classroom settings (Waxman & Padrón, 2004; Waxman, Tharp, & Hilberg, 2004), a systematic observation instrument, the Professional Development Observation

Checklist [PDOC] (Waxman et al., 2008) based on interactive coding systems was developed. The 48-item observation protocol was used to determine the extent to which the professional development sessions addressed standards for professional development and the instructional needs of ELLs. Twenty-nine of the items measured the instructional orientation (i.e., lecture, group work), instructional strategies (i.e., summarized main points, used activities to demonstrate concepts), extent of focus on students (i.e., content appropriateness for ELLs), use of instructional materials and technology, and connections to research and state mathematics standards. The remaining 19 items focused on presentation style, level of preparation, physical environment and general participant response to the training.

The PDOC is comprised of two forms. First, observers indicate on an *Observation Notes* form whether certain behaviors occurred during twelve 15-minute intervals (one three-hour session). These results were then transferred to a *Data Summary* form and recorded according to frequency of occurrence: 0= not evident; 1 = rarely evident; 2 = somewhat evident; and 3 = highly evident. One workshop in a particular module yields four *Data Summary* forms, one for each session. In the present study, the median inter-rater reliability across all four observers was found to be excellent ($r = .88$).

Formative and summative surveys. The formative survey was developed to document participant responses to each training session. The survey was administered at the end of each day's morning and afternoon sessions for a total of four surveys. Workshop participants rated each session on ten key elements that correspond to general features of most training workshops. Items asked whether the session began and ended

on time, whether the length of the break was sufficient, whether it was interesting, informative, paced well, and organized. The survey also inquired about the extent to which the instructional materials and presentation of topics was clear. In addition, two open-ended items addressed participant reactions to (a) the delivery of information by the trainer, and (b) the overall impression of the content of the session. A final open-ended item allowed additional comments by participants.

In contrast to the formative survey, the summative survey was designed to assess participant reaction to specific aspects and features of the entire workshop and its content. Forty-three items corresponded to seven dimensions that included trainer attributes, instructional materials, activities, presentation – method, presentation – content, participant outcome (effect of training on participants), and participant expectations (for teachers' instruction and students' achievement). Administered at the conclusion of the training, participants indicated the degree to which they agreed or disagreed with 43 declarative statements about the workshop. The summative survey provides a detailed account of participants' reaction to each dimension of the workshop. Results of the survey can also be compared to determine whether responses are consistent across workshops or if certain training workshops are better received than others.

Field notes and systematic materials review. The field notes from ethnographic observations were collected over 240 hours of training and focused on the content of sessions (especially that which pertained to ELLs), presenters' language and behavior, and participants' reaction to training. The systematic review of materials examined over

2,500 pages including trainers' manuals, lessons for use with students, accompanying videos and any other materials provided. The review of materials examined the quantity of references to ELLs by tallying each mention of ELLs. The quality of references to ELLs was analyzed by comparing the suggestions offered in the materials with the instructional practices identified as effective in the research literature.

Results

RQ 1: To What Extent Were the Professional Development Activities Aligned with Standards for Professional Development?

This section of the results relates to the extent to which the professional development sessions incorporated the knowledge base, albeit limited, regarding what is known about effective professional development (i.e., classroom-based, teacher selection of goals and activities, long-term and continuous, etc.) and acknowledges the standards for professional development offered by NCLB and NCSD.

Observations of the professional development sessions revealed that whole group/direct instruction, group work, and collaborative learning were the most frequently used instructional orientations. While heavy use of whole group, direct instruction does not reflect best practices for teacher professional development, especially in the context of a mathematics reform effort that seeks to increase student interaction, the inclusion of collaborative learning activities provided participants opportunities to interact while learning the content. The professional development sessions also modeled the use, to varying extents, of practices that are relevant to classroom mathematics instruction, such as asking higher-level questions, connecting

with participants' prior knowledge and experience, and incorporating technology. Table C-1 details the extent to which various instructional practices were utilized in the sessions.

Beyond examining the extent to which classroom instructional practices were included in the sessions, it is important to understand the extent to which the professional development activities aligned with the standards for professional development set forth by governmental and professional entities. As discussed above, different sets of standards approach the notion of quality professional development in varying ways. NCLB standards, for example, tend to focus on content, while NSDC standards mainly address the context and the process of professional development. The professional development program examined in this study included less than half of the combined recommendations made by NCLB and NSDC. Table C-2 highlights the elements included in each of the two sets of standards for high quality professional development and reports which components were included in the professional development program examined in the present study.

Speck and Knipe (2005) note that, "teachers need rich examples, modeling, practice, and coaching embedded in subject areas...practiced in the context of the classroom and shared with colleagues" (p. 14). While the professional development sessions included a heavy emphasis on mathematics content, the program included very few components related to context and process such as those suggested by Speck and Knipe (2005). The professional development program by in large utilized a top-down, training model for providing mathematics professional development to teachers.

Although several teachers were included in the initial development of the sessions, the sessions were delivered by “experts” and took place at sites far from the classroom. Each grade band module lasted only two days, and did not include any framework for classroom-based follow-up support or networks for teacher collaboration on the topics presented. In summary, although the professional development activities included some practices that teachers could implement in the classroom (i.e., collaborative learning and modeling) the professional development was limited in terms of the extent to which the processes by and contexts in which teachers benefit most from professional development were acknowledged.

RQ 2: What Types of Research-based Instructional Practices Specific to Teaching Mathematics to ELLs were Included and to What Extent were those Instructional Practices Utilized in the Professional Development?

Most of the training and accompanying materials focused on “best practices” for all learners and did not specifically address language or cultural issues that influence the learning of mathematics for ELLs. Overall, the training embodied the second instructional approach offered by Bay-Williams and Herrera (2007), a perspective that implies that mathematics instruction that is in line with the standards reform is good instruction for students of any cultural, linguistic, or academic background. The following sections will address the second research question by noting findings from the systematic observations and field notes of the training sessions as well as reporting results from the materials analysis and participant surveys.

Systematic Observations and Field Notes

As noted in Table C-3, data from over 240 hours of systematic observations across the modules revealed that trainers rarely addressed ELLs. Similarly, little attention was given to low-achieving learners in general and to the misconceptions that students, and especially ELLs due to language issues, hold in regard to mathematics content. An observer noted in her field notes that “There is little specific mention of ELL or struggling students by the presenters during the presentations of the modules.”

Not only was the quantity of focus on differentiating instruction for ELLs lacking, but the few references made by presenters regarding the needs of culturally and linguistically diverse students also lacked in quality. One observer noted in her field notes, for example, that after covering four hours of materials, the presenter stated, “Oh, and by the way, this all applies to English language learners as well.”

Just as important as examining the quantity and quality of references to ELLs and mathematics instruction, is the issue of the degree to which the instructional practices encouraged in the professional development trainings were appropriate for meeting the academic, linguistic, and cultural needs of ELLs. Research with mathematics instruction for ELLs has identified several teaching practices that are important in helping second language learners master content and develop language. Those practices include (a) using students’ heritage language (Coggins et al., 2007; Garrison & Mora, 1999; Khisty, 1995; Moschkovich, 1999a, 2002), (b) making connections to and focusing on language learning by using mathematics as a tool to teach language (Anstrom, 1997; Buchanan & Helman, 1993; Khisty, 2002), (c) focusing on mathematical communication (Khisty,

1995; Leiva, 2006; Moschkovich, 1999b, 2002, 2006), and (d) utilizing culturally relevant and student-centered-real life applications in mathematics instruction (Brenner, 1998; Celedon-Pattichis, 2004; Dale & Cuevas, 1992; Secada, 1992).

Inclusion of these four instructional practices in the professional development is summarized in Table C-4. The attention given to the two instructional practices that were addressed in the professional development trainings was in the context of the general student body, not specific to ELLs. In the K-2 module, for example, a focus on language learning via mathematics instruction encouraged teachers to use children's literature to teach mathematics concepts. The professional development did not, however, show teachers how to choose appropriate children's literature for students' language proficiency or how to use the literature to make the mathematics comprehensible for ELLs, two suggestions that could have facilitated the use of mathematics content to teach language.

The most widely observed research-based practice for ELLs was a focus on mathematical communication. All the modules highlighted the importance of developing deep mathematical discourse in the classroom. The efforts to develop mathematical discourse, however, were skewed towards developing mathematical communication through student oral verbalization, and ignored other ways that ELLs of various proficiency levels could show demonstrate content understanding, develop communication skills (i.e., listening, reading, and writing) and academic language proficiency in mathematics.

Curriculum and Materials Analysis

The materials analysis revealed results similar to the observational component. The professional development materials addressed issues pertaining to ELLs in less than 1% of the content and references made to ELLs in the materials were general, most often including ELLs in comments related to diverse students. An activity described in a training notebook for teachers stated, for example, “Therefore, scaffolding can be used with all students of varying levels whether they are struggling students, English language learners, students with special needs, or gift and talented students.” While research supports scaffolding as an important instructional practice and scaffolding is “good teaching,” this explanation of scaffolding does not go far enough in explaining the specific importance of scaffolding for ELLs (due to language) or how teachers should best provide scaffolded mathematics instruction for language learners.

In contrast to the actual lessons and explanations that were used to train teachers, the first section of the training notebooks contained detailed literature reviews that did indeed focus on ELLs and how teachers can provide effective and appropriate mathematics instruction for these students (i.e., activating prior knowledge, modeling, using purposeful vocabulary instruction, and incorporating instructional conversations). As noted above, however, these issues were not infused throughout nor highlighted in the training materials or student lessons and it is unclear the extent to which participants accessed the reviews of literature or implemented the instructional suggestions therein. This approach to providing information on ELLs as separate from the professional

development activities suggests that meeting the academic and linguistic needs of second language learners was as an afterthought to the development of the content modules.

Survey

Because the formative surveys were generally used to measure participants' reaction to logistical elements of the professional development (i.e., length of session, availability of a break during the sessions, etc.), only results from the summative surveys will be discussed in this section. One item on the summative survey that is especially relevant to the effectiveness of the professional development for teachers of ELLs measures the extent to which participants believed the content of the professional development sessions would help reduce achievement gaps between higher and lower achieving students. Due to gaps in schooling, inadequate instruction, and limited English proficiency, ELLs frequently perform poorly on standardized achievement tests and are considered to be low achieving. The participants generally reacted favorably to this item, with 96% of respondents agreeing or strongly agreeing that the content of the professional development sessions would help reduce achievement gaps between higher and lower achieving students.

Although the majority of participants believed the professional development would be effective in reducing achievement gaps, written comments by some participants seemed to indicate that a focus on language and culture was missing. While these comments regarding language and culture represent only a very small portion of the total comments, they highlight some of what is missing in this training in terms of mathematics and ELLs.

- “Tough but good - may need some scaffolding suggestions for Special Education & ELLs”
- “I would love to see this material in Spanish.”
- “Some of the materials require modifications to meet the 5E of ELL/Special Ed.”
- “What strategies do you use for your GT? ELL? Special pops?”

In summary, the training and accompanying materials did not specifically focus on instructional practices for use with ELLs. Only one research-based practice (a focus on mathematical communication) for teaching mathematics to ELLs was utilized across the grade level modules and this practice was generically presented without attention to the linguistic needs of second language learners. ELLs were rarely mentioned during the professional development, and participants received no specific information on how to modify or enhance the training materials to work with ELLs. In essence, the professional development failed to acknowledge the unique academic, cultural and linguistic needs of this sub-group of students who comprise nearly one-fifth of the student population in the state (Lara-Alecio, et. al., 2005).

Discussion

The program that was the focus of this study included few elements of what is known about best practices in teacher professional development, such as utilizing classroom-based settings, including teachers as professional development providers, and offering opportunities for long-term follow-up support (Hawley & Valli, 1999). While the participants received mathematics content, the lack of connection to authentic

classroom contexts and the actual work that teachers do suggests that the benefits of the professional development program may be limited.

Teaching ELLs is an ever-increasing component of teachers' classroom work. Recent NAEP data, however, indicate that ELLs do not receive the mathematics instruction necessary to be successful. Only 7% of 8th grade ELLs, for example, are at or above the proficient level in mathematics, while just 20% of former 8th grade ELLs are considered proficient or advanced in mathematics (National Center for Educational Statistics [NCES], 2007). In light of the serious underachievement of ELLs, professional development that addresses the academic needs of this group of students is important. Nonetheless, this professional development program did not integrate the research on mathematics instruction with second language learners and, overall, the results indicated that the prevailing attitude was that "good" curriculum and "good" instruction were effective for all types of students and that there was little need to differentiate instruction for ELLs or other culturally diverse students. The lack of attention to culturally and linguistically diverse students communicates an erroneous assumption that the student body is homogeneous and does not consider that all teachers at some point will teach mathematics to ELLs and more likely, most already do. While the state-wide professional development program purported to train teachers in mathematics instruction appropriate for all students in the state, the lack of information given to teachers regarding their work with ELLs suggests that a large portion of students will not receive the mathematics instruction necessary to be successful.

The results of the present study provide a starting point for thinking about how the needs of teachers of ELLs can be integrated into content-specific professional development programs and how research can support this endeavor, yet the limitations of this study must be addressed. This study's documentation of the absence of specific information on ELLs within the professional development sessions suggests that there will be little change in the mathematics instruction that teachers provide to ELLs. Observations of classroom instruction and information on student achievement, however, must be gathered to substantiate this conclusion.

Future content area professional development, such as that which focuses on mathematics or science, should include specific information about ELLs as an integral part of the professional development activities. When knowledge and skills relating to the instruction of ELLs are infused into subject matter professional development activities, all teachers, not just those who hold a bilingual/ESL credential, learn about how best to meet the academic and linguistic needs of language learners. This view concedes the reality that a dearth of adequately prepared and credentialed bilingual/ESL teachers exists and that all teachers should receive training for work with ELLs.

While this type of hybrid ELL-subject matter professional development should not replace training that provides in-depth exposure to topics such as language acquisition or cultural awareness for teachers, professional development that includes information on specific content areas and instruction for ELLs within those content areas may be successful in addressing some of the incongruence that exists between the instructional practices of teachers and the culturally and linguistically diverse children

they teach. Assuming a hybrid ELL-subject area approach to professional development emphasizes the intersection of pedagogical and content knowledge with the context in which ELLs encounter mathematics in our schools - a context in which both language and culture play a pivotal role in teaching and learning. If pedagogical content knowledge encompasses, in Shulman's (1986) words, "the ways of representing and formulating the subject that make it comprehensible to others," (p. 9) then mathematics instruction must address this larger contextual sphere by providing teachers with instructional practices that reflect the linguistic and cultural knowledge necessary to work successfully with ELLs in the mathematics classrooms. In the professional development program examined in this study, for example, pairing the mathematics pedagogy and content with the specific knowledge and skills necessary for teachers to work effectively with ELLs in the mathematics classroom would have empowered all teachers with a knowledge base for working with ELLs to make the mathematics content comprehensible and to provide ELLs equitable access to mathematics.

Conclusion

The problems identified with the professional development program studied in the present study, namely the lack of attention to specific student subgroups, such as ELLs, and the failure to include best practices for professional development, suggest that a "one size fits all" to professional development is ineffective and that future professional development should provide opportunities to fit professional development content and processes to the unique needs of teachers who educate diverse students in varied contexts and to give these teachers what Ball (1996) has referred to as "the

specifics of day-to-day, minute-to-minute practice” (p. 502). In other words, teachers need specific information both on content (i.e., mathematics), but just as importantly, on how to effectively teach that content to students of diverse backgrounds.

The serious achievement problems in mathematics for ELLs and the lack of preparation for teachers who educate ELLs require a comprehensive, educational intervention. Professional development programs that purport to address the academic needs of all students must reflect the diversity found in classrooms and attend to multiple factors including the curriculum, classroom instruction and students’ language and culture (Waxman, Padrón, & García, 2007) by offering teachers learning experiences that are classroom-based, long-term, and provide specific information on how to teach the content to students of varying backgrounds. Professional development programs that do not specifically incorporate all of those aspects are destined to fail to improve the education of ELLs.

CHAPTER V

CONCLUSIONS

The three research studies that comprise this dissertation address two critical areas for middle school ELLs: reading and mathematics. Study I (Chapter II) and Study II (Chapter III) addressed reading instruction for ELLs by a) systematically examining the extant research related to English reading comprehension with middle school ELLs and b) investigating the cognitive reading strategies that Hispanic middle school students perceive using when reading in English. Study III (Chapter IV) addressed another important issue for second language students, that is, classroom practices and professional development focused on mathematics for teachers of ELLs. In the present chapter, I summarize the results of the studies and connect the findings across the three studies while also situating the findings within the current context in which ELLs are educated. I also discuss implications for classroom instruction and future research.

Summary of Findings

Findings from Study I, a research synthesis, highlighted the importance of vocabulary in English reading comprehension for ELLs. Overall, the studies included in the synthesis suggested that vocabulary is a key factor influencing ELLs' ability to comprehend English text and established that transfer of vocabulary knowledge from the first language (L1) to reading in the second language (L2) can occur for native Spanish-speaking ELLs. While less proficient readers may perceive the L1 as an impediment to

English reading comprehension, the synthesis results suggested that more proficient readers can strategically use the L1 to discern unknown vocabulary and comprehend English texts. Furthermore, the studies suggested that reading strategies can be transferred across languages and documented the use of translation as a reading strategy that proficient native Spanish-speaking bilingual readers use to comprehend texts. The use of cognates was also offered as a component of strategic reading that native Spanish-speaking readers can access during reading comprehension. In terms of Spanish-English cognates, findings indicated a reciprocal relationship, such that cognate identification and use can augment English reading just as proficiency in English reading can add to students' ability to recognize cognates.

Results from Study II, which investigated cognitive reading strategy use by Hispanic middle school students, indicated that Hispanic middle school students perceived using both successful and less successful cognitive reading strategies. The extent of use of these strategies, however, indicated that middle school Hispanic students do not use cognitive reading strategies on a consistent basis when reading in English. Significant differences in perceptions of two cognitive reading strategies were found as a function of ELL status, and Hispanic middle school students demonstrated significant differences on eight reading strategies as a function of self-reported reading grade. Similar to earlier research (Padrón & Waxman, 1988), higher achieving students, in general, used more successful reading strategies than their lower achieving peers.

The results of Studies I and II contribute to a fuller understanding both of the challenges that middle school ELLs confront and the strengths that they bring to English

reading. The synthesis studies documented unknown vocabulary as particularly problematic in ELLs' English reading comprehension efforts, and this word focused approach to English reading by ELLs seems to be corroborated by the Hispanic middle school ELLs' reported use of the less successful strategy Look Up Words In The Dictionary. Additionally, the limited reported use of cognitive reading strategies in general indicates another area of reading comprehension that is challenging for this group of students.

Although Studies I and II documented challenges to English reading comprehension for middle school ELLs, the findings also suggested resources that ELLs can utilize during efforts to comprehend English texts. Specifically, studies in the synthesis described the potential for ELLs to strategically use the first language for English reading comprehension via English-Spanish cognates, transfer and translation. The RSQ instrument used in Study II to measure students' perceptions of cognitive reading strategy use did not gather information specifically related to the unique linguistic resources to which ELLs have access during English reading comprehension, however, findings from Study I can be used to inform future work with the instrument. The RSQ should be expanded to include reading strategies that only Spanish-speaking ELLs have access to, such as translation and use of cognates. Studies using an expanded version of the RSQ would be valuable in corroborating the findings from the more qualitative research that was included in the synthesis.

Study I highlighted the potential for drawing on students' linguistic resources in order to facilitate a strategic approach to English reading comprehension, yet Study II

documented an overall lack of cognitive reading strategy use by Hispanic ELLs. Perhaps the potential of ELLs to strategically utilize their linguistic resources for English reading comprehension is unfulfilled due to limitations of the programs that serve ELLs and the type of instruction that ELLs receive. Teachers may not be utilizing the first language as a means for improving English reading comprehension due to a lack of training specific to Spanish-speaking ELLs. Additionally, research at the middle school level has almost exclusively focused on the monolingual English reader and, thus, provides little guidance for teachers wishing to utilize the L1 as a tool for helping students to become proficient English readers. Reading instruction that uses English-monolingual students as the standard is inappropriate and is a disservice to Spanish-speaking ELLs because this type of reading instruction ignores the unique and valuable resource that students bring to school, that is, the home language.

Educating students in their L1 is important in its own right. Every student should have the opportunity to develop full literacy and oracy in the language of their parents and grandparents. Language, culture and self-concept are tightly intertwined, and the education of ELLs should acknowledge this relationship by including L1 development, culturally relevant instruction, and an environment that respects students' unique identities. Understanding native language instruction as an end in itself, however, fails to take advantage of how Spanish can be used strategically by students as a tool to be successful in English. Research included in Study I, for example, noted the way that native Spanish-speaking students who were also proficient English readers strategically utilized Spanish vocabulary knowledge to understand unknown English vocabulary.

Spanish language facility is, of course, an impediment to English-monolingual teachers' ability to teach and model the strategic use of the L1, and the extent to which even bilingual teachers know how to go beyond using the L1 as the language of instruction by using the L1 as a strategic tool for L2 development is unknown. Future research should measure teacher knowledge and document teacher practice in teaching English reading comprehension that includes strategic use of the L1 to Hispanic ELLs.

The implication of both the importance of the strategic application of the L1 to L2 reading as evidenced in Study I and the lack of cognitive reading strategies documented in Study II is that teachers' reading instruction for middle school Hispanic ELLs must be enhanced. Professional development is one avenue to improve the instruction that Hispanic ELLs receive. Study III demonstrated, however, that teachers receive professional development of limited quality and that little of the professional development is connected to instruction for ELLs. Specifically, Study III found that the professional development program that was the focus of the study lacked elements of what is known about quality teacher professional development, such as acknowledging teachers' unique students and classroom contexts and providing long-term support to teachers. Furthermore, the professional program assumed a generic approach to instruction. That is, the program promoted a one size fits all model of instruction in which the assumption is that there is no need to differentiate instruction for ELLs or other culturally diverse students.

In light of the low achievement and attainment of Hispanic students in general, and Hispanic ELLs in particular, the importance of providing professional development

that includes specific information on the academic, linguistic, and cultural needs of students cannot be overstated. Future professional development must include specific practices related to teaching ELLs, such as making content comprehensible and culturally relevant. Professional development that focuses on reading, in particular, must also include information on how to teach students to discern unknown vocabulary and implement reading strategies that utilize the L1. Additionally, teachers must be trained to use diagnostic information, such as that which can be taken from the RSQ, to tailor instruction in a way that increases students' use of positive reading strategies and minimizes or eliminates students' use of negative reading strategies.

Future Research

Future research focusing on ELLs' English reading comprehension and teacher professional development for work with ELLs should be conducted both at the student and teacher levels. An expanded version of the RSQ should be used in order to better understand the reading strategies that Hispanic students implement when reading in English. In light of research that has documented the reading strategies of native Spanish-speaking ELLs, the RSQ should be expanded to include reading strategies that utilize students' L1, such as cognates and transfer. Additionally, including an English text for students to read prior to completion of the RSQ would allow students to think about a specific text while completing the RSQ. Thinking about a specific text while answering RSQ items may enhance the accuracy of students' responses without interrupting students' processing during the act of reading. Furthermore, the inclusion of

a text would allow researchers to better understand how the type and difficulty level of the text influence students' reading strategy use.

In addition to making modifications to the RSQ, future research should examine Hispanic students' use of cognitive reading strategies in the middle school content area classroom. At the middle school level, academic success for ELLs depends in large part on the ability to comprehend content area texts. Mixed methods studies could utilize self-report instruments to examine, for example, the type and number of cognitive reading strategies that Hispanic ELLs use when reading non-fiction science texts, while student interviews or think alouds could be used to better understand some of the complexities of content area reading for ELLs, including how the L1 contributes to comprehension of science texts.

Content area-specific research should also begin to look at the role of teachers and instruction in middle school Hispanic ELLs' reading strategy use. Teachers have been found to be an important factor in student learning, yet little is known about how teachers' instruction may influence Hispanic ELLs' knowledge and use of cognitive reading strategies, especially in the content area classroom. This line of research should begin by investigating teachers' current knowledge of and practice with cognitive reading strategies. Observational and survey research could be conducted to document teacher knowledge and classroom implementation. Additionally, intervention studies could determine the most effective ways to teach subject-specific reading strategies to Hispanic ELLs at the middle school level and provide teachers guidance on how to integrate strategy instruction into existing content area instruction. Once research has

established teachers' extent of knowledge regarding cognitive reading strategies as well as their current level of implementation of reading strategy instruction and intervention studies have determined effective ways to teach content area reading strategies, professional development programs can be developed.

Professional development programs focusing on the English reading comprehension of middle school ELLs should be framed by best practices in professional development (i.e., classroom-based, long-term support, etc.) and should include information specific to teaching reading to ELLs and integrating reading comprehension instruction into the content area classroom. Evaluation of these professional development programs can enhance understanding of how professional development can be utilized to enhance teachers' instruction with middle level ELLs so that this group of students can receive a high-quality, equitable education.

REFERENCES

- Abedi, J. (2002). Assessment and accommodations of English language: Issues, concerns, and recommendations. *Journal of School Improvement, 3*(1). Retrieved November 6, 2006 at <http://www.ncacasi.org/jsi/2002v3i1/assessment>.
- Afflerbach, P., & Johnston, P. (1984). Research methodology on the use of verbal reports in reading research. *Journal of Reading Behavior, 16*, 307-321.
- Afflerbach, P., Pearson, P. D., & Paris, S. G. (2008). Clarifying differences between reading skills and reading strategies. *The Reading Teacher, 61*, 364-373.
- Alexander, D., Heaviside, S., & Farris, E. (1999). *Status of education reform in public elementary and secondary schools: Teachers' perspectives*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Anderson, R. C., & Freebody, P. (1981). Vocabulary knowledge. In J. T. Guthrie (Ed.), *Comprehension and teaching: Research reviews* (pp. 77-117). Newark, DE: International Reading Association.
- Anstrom, K. (1997). *Academic achievement for secondary language minority students: Standards, measures, and promising practices*. National Clearinghouse for Bilingual Education. Retrieved on February 19, 2007 at <http://www.ncela.gwu.edu/pubs/reports/acadach.htm#Mathematics>.
- August, D. (2003). *Supporting the development of English literacy in English language learners*. Baltimore: The Johns Hopkins University Center for Research on the Education of Students Placed at Risk.

- August, D., & Shanahan, T. (2006). Introduction and methodology. In D. August & T. Shanahan (Eds.), *Developing literacy in second language learners* (pp. 1-42). Mahwah, NJ: Erlbaum.
- Baker, L., & Brown, A. L. (1984). Metacognitive skills and reading. In P. D. Pearson (Ed.), *Handbook of reading research* (pp. 353-394). New York: Longman.
- Ball, D. L. (1996). Teacher learning and the mathematics reforms: What we think we know and what we need to learn. *Phi Delta Kappan*, 77, 500-508.
- Ball, D. L., & Cohen, D. K. (1999). Developing practice, developing practitioners: Toward a practice-based theory of professional development. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession* (pp. 3-32). San Francisco: Jossey-Bass.
- Bay-Williams, J., & Herrera, S. (2007). Is “just good teaching” enough to support the learning of English language learners? Insights from sociocultural learning theory. In W. Gary Martin (Ed.), *The learning of mathematics: 69th NCTM yearbook* (pp. 43-64). Reston, VA: NCTM.
- Beck, I. L., Omanson, R. C., & McKeown, M. G. (1982). An instructional redesign of reading lessons: Effects on comprehension. *Reading Research Quarterly*, 17, 462-481.
- Beck, I. L., Perfetti, C. A., & McKeown, M. G. (1982). Effects of long term vocabulary instruction on lexical access and reading comprehension. *Journal of Educational Psychology*, 74, 506-521.

- Bereiter, C., & Bird, M. (1985). Use of thinking aloud in identification and teach of reading comprehension strategies. *Cognition and Instruction*, 2, 131-156.
- Biancarosa, G., & Snow, C. E. (2006). *Reading next — A vision for action and research in middle and high school literacy: A report to Carnegie Corporation of New York* (2nd ed.). Washington, DC: Alliance for Excellent Education.
- Blank, R. K., de las Alas, N., & Smith, C. (2008). *Does teacher professional development has effects on teaching and learning? Analysis of evaluation findings from programs for mathematics and science teachers in 14 states*. Washington, DC: Council of Chief State School Officers.
- Block, C. C., Gambrell, L. B., & Pressley, M. (2004). *Improving comprehension instruction*. San Francisco: Jossey-Bass.
- Block, C. C., & Pressley, M. (2002). *Comprehension instruction: Research-based instruction*. New York: Guilford.
- Block, E. (1986). The comprehension strategies of second language readers. *TESOL Quarterly*, 20, 463-494.
- Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher*, 33(8), 3-15.
- Brenner, M. E. (1998). Adding cognition to the formula for culturally relevant instruction in mathematics. *Anthropology & Education Quarterly*, 29, 214-244.
- Brown, A. L. (1980). Metacognitive development and reading. In R. J. Spiro, B. C. Bruce, & W. F. Brewer (Eds.), *Theoretical issues in reading comprehension*. (pp. 453-481). Hillsdale, NJ: Erlbaum

- Brown, R. (2001). Straddling two worlds: Self-directed comprehension instruction for middle schoolers. In C. C. Block & M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp. 337-350). New York: Guilford.
- Buchanan, K., & Helman, M. (1993). *Reforming mathematics instruction for ESL literacy students*. Washington, DC: National Clearinghouse for Bilingual Education.
- Bybee, R. W. (1997). *Achieving science literacy*. Portsmouth, NH: Heinemann.
- Carlo, M. S., August, D., McLaughlin, B., Snow, C. E., Dressler, C., Lippman, D. N., et al. (2004). Closing the gap: Addressing the vocabulary needs of English-language learners in bilingual and mainstream classrooms. *Reading Research Quarterly, 39*, 188-215.
- Carpenter, T. P., Fennema, E., Peterson, P. L., Chiang, C., & Loeff, M. (1989). Using knowledge of children's mathematics thinking in classroom teaching: An experimental study. *American Educational Research Journal, 26*, 499-531.
- Carrell, P. L. (1992). Awareness of text structure: Effects on recall. *Language Learning, 42*, 1-20.
- Carrell, P. L. (1998). Can reading strategies be successfully taught? *The Language Teacher, 22*(2). Retrieved April 23, 2008 at <http://jalt-publications.org/tlt/files/98/mar/carrell.html>.
- Celedón-Pattichis, S. (2004). Research findings involving English-language learners and implications for mathematics teachers. In *Empowering the beginning teacher of mathematics, middle school*. Reston, VA: NCTM. Retrieved April 12, 2007 at

http://www.nctm.org/uploadedFiles/Lessons_and_Resources/Title_I_Teachers_and_Schools/research%20findings.pdf.

Center for Teaching Quality. (nd). *What we know: Professional development*. Retrieved on October 11, 2007 at <http://www.teachingquality.org/whytmatters/pd.htm>.

Center on Education Policy. (2007). *Answering the question that matters most: Has student achievement increased since No Child Left Behind?* Washington, DC: Center on Education Policy. Retrieved October 1, 2008, from <http://www.cep-dc.org/index.cfm?fuseaction=document.showDocumentByID&nodeID=1&DocumentID=200>.

Chall, J. S. (1987). Two vocabularies for reading: Recognition and meaning. In M. G. McKeown & M. E. Curtis (Eds.), *The nature of vocabulary acquisition* (pp. 7-17). Hillsdale, NJ: Lawrence Erlbaum.

Chamot, A. U., & El-Dinary, P. B. (1999). Children's learning strategies in language immersion classrooms. *The Modern Language Journal*, 83, 319-338.

Chamot, A. U., & O'Malley, J. M. (1996). The cognitive academic language learning approach: A model for linguistically diverse classrooms. *Elementary School Journal*, 96, 259-273.

Chou Hare, V., & Smith, D. C. (1982). Reading to remember: Studies of metacognitive reading skills in elementary school-aged children. *Journal of Educational Research*, 75, 157-164.

- Christian, D. (2006). Introduction. In F. Genesee, K. Lindholm-Leary, W. Saunders & D. Christian (Eds.), *Educating English language learners: A synthesis of research evidence* (pp. 1-13). Cambridge: Cambridge University Press.
- Civil, M. (2006). *Working towards reform in mathematics education: Parents', teachers', and students' view of "different."* Appalachian Collaborative Center for Learning, Assessment and Instruction in Mathematics. Working paper no. 31. Athens, OH: ACCLAIM Research Initiative. Retrieved on September 9, 2007 at <http://www.acclaim-math.org/docs/WP31.pdf>.
- Cobb, P., Wood, T., Yackel, E., Nicholls, J., Wheatley, G., Trigatti, B., et al. (1991). Assessment of a problem-centered second-grade mathematics project. *Journal for Research in Mathematics*, 22, 13-29.
- Coggins, D., Kravin, D., Coates, G. D., & Carroll, M. D. (2007). *English language learners in the mathematics classroom*. Thousand Oaks, CA: Corwin.
- Cohen, A. D. (1986). Mentalistic measures in reading strategy research: Some recent findings. *English for Specific Purposes*, 5(2), 131-145.
- Cohen, D., & Hill, H. (2001). *Learning policy: When state education reform works*. New Haven, CT: Yale University Press.
- Conley, M. (2008). Cognitive strategy instruction for adolescents: What we know about the promise, what we don't know about the potential. *Harvard Educational Review* 78, 84-105.
- Cromley, J. G. (2005). Metacognition, cognitive strategy instruction and reading in adult literacy. *Review of Adult Learning and Literacy*, 5, 187-204.

- Cummins, J. (1980). The construct of language proficiency in bilingual education. In J.E. Atlatis (Ed.), *Georgetown University round table on language and linguistics 1980* (pp. 81-103). Washington, DC: Georgetown University Press.
- Cummins, J. (1981). The role of primary language development in promoting educational success for language minority students. In J. Cummins (Ed.), *Schooling and language minority students: A theoretical framework* (pp. 3-51). Los Angeles: California State Department of Education.
- Cummins, J. (1993). The research base for heritage language promotion. In M. Danesi, K. McLeod, & S. Morris (Eds.) *Heritage languages and education: The Canadian experience* (pp. 91-104). Oakville, Ontario: Mosaic Press.
- Dale, T. C., & Cuevas, G. J. (1992). Integrating mathematics and language learning. In P. Richards-Amato & M. Snow (Eds.), *The multicultural classroom* (pp. 330-348). White Plains, NY: Longman.
- Dale, T. C., & Cuevas, G. J. (1995). Integrating language and mathematics learning. In J. Crandall (Ed.), *ESL through content area instruction-language in education: Theory and practice* (pp. 9-54). Washington, DC: Office of Education Research and Improvement.
- Darling-Hammond, L., & McLaughlin, M. (1995). Policies that support professional development in an era of reform. *Phi Delta Kappan*, 77, 597-604.
- Deshler, D., Palincsar, A., Biancarosa, G., & Nair, M. (2007). *Informed choices for struggling adolescent readers: A research-based guide to instructional programs and practices*. New York: Carnegie.

- Desimone, L., Porter, A., Garet, M., Yoon, K., & Birman, B. (2002). Effects of professional development on teachers' instruction: Results from a three year longitudinal study. *Educational Evaluation and Policy Analysis, 24*, 81-112.
- Dilworth, M. E., & Imig, D. G. (1995). Reconceptualizing professional teacher development. *ERIC Review, 3*(3), 5-11.
- Dole, J. A., Duffy, G. G., Roehler, L. R., & Pearson, P. D. (1991). Moving from the old to the new: Research on reading comprehension instruction. *Review of Educational Research, 61*, 239-264.
- Dulay, H. C., & Burt, M. K. (1978). *Why bilingual education? A summary of research findings* (2nd ed.). San Francisco: Bloomsbury West.
- Echevarria, J., & Graves, A. (2000). *Making content comprehensible for English language learners: The SIOP model*. Boston: Allyn and Bacon.
- Echevarria, J., Short, D., & Powers, K. (2005). *School reform and standards-based education: How do teachers help English language learners?* CREDE Technical Report. Retrieved April 22, 2008 from http://www.cal.org/crede/pubs/tech_report_E53C6.pdf.
- Ehlers-Zavala, F. (2008). Teaching adolescent English language learners. In S. Lenski & J. Lewis (Eds.), *Reading success for struggling adolescents learners* (pp. 74-89). New York: Guilford.
- Elmore, R. (2002). *Bridging the gap between standards and achievement: The imperative for professional development in education*. Washington, DC: Albert Shaker Institute.

- Ericsson, K. A., & Simon, H. A. (1984). *Protocol analysis: Verbal reports as data*. Cambridge, MA: MIT Press.
- Fishman, B. J., Marx, R. W., Best, S., Tal, R. T. (2003). Linking teacher and student learning to improve professional development in systemic reform. *Teaching and Teacher Education, 19*, 643-658.
- Fitzgerald, J. (1995). English-as-a-Second-Language learners' cognitive reading processes: A review of research in the United States. *Review of Educational Research, 65*, 145-190.
- Flavell, J. H. (1978). Metacognitive development. In J. M. Scandura & C. J. Brainerd (Eds.), *Structural/process theories of complex human behaviour* (pp. 213-245). Alphen, The Netherlands: Sijthoff and Noordhoff.
- Fry, R. (2006). *The changing landscape of American public education: New students, new schools*. Washington, DC: Pew Hispanic Center. Retrieved October 12, 2006 from <http://pewhispanic.org/files/reports/72.pdf>.
- Fuller, B., Wright, J., Gesicki, K., & Kang, E. (2007). Gauging growth: How to judge No Child Left Behind? *Educational Researcher, 36*(5), 268-278.
- Gambrell, L. B., & Bales, R. J. (1986). Mental imagery and the comprehension-monitoring performance of fourth- and fifth-grade poor readers. *Reading Research Quarterly, 21*, 454-464.
- Gambrell, L. B., Block, C. C. & Pressley, M. (2002). Improving comprehension instruction: An urgent priority. In C. C. Block, L. B. Gambrell & M. Pressley

- (eds.), *Improving comprehension instruction*. (pp. 3-16). San Francisco: Jossey-Bass.
- Gambrell, L. B. & Jawitz, P. B. (1993). Mental imagery, text illustrations, and children's story comprehension and recall. *Reading Research Quarterly*, 28, 264-273.
- Gándara, P., & Maxwell-Jolly, J. (2006). Critical issues in developing the teacher corps for English learners. In K. Téllez & H. C. Waxman (Eds.), *Preparing quality educators for English Language Learners* (pp. 99-120). Mahwah, NJ: Lawrence Erlbaum.
- Gándara, P., Maxwell-Jolly, J., & Driscoll, A. (2005). *Listening to teachers of English language learners: A survey of California teachers' challenges, experiences, and professional development needs*. Santa Cruz, CA: The Center for the Future of Teaching and Learning.
- García, E. E. (2001) *Understanding and meeting the challenge of student diversity* (3rd ed.). Boston, MA: Houghton Mifflin.
- García, G. E. (1991). Factors influencing the English reading test performance of Spanish-speaking Hispanic children. *Reading Research Quarterly*, 26, 371-392.
- García, G. E. (1998). Mexican-American bilingual students' metacognitive reading strategies: What's transferred, unique, problematic? *National Reading Conference Yearbook*, 47, 253-263.

- García, G.E. (2000). Bilingual children's reading. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research* (Vol. 3, pp. 813-834). Mahwah, NJ: Erlbaum.
- García, G.E. (2003). The reading comprehension development and instruction of English-language learners. In A. Sweet & C. Snow (Eds.), *Rethinking reading comprehension* (pp. 30-50). New York: Guilford.
- García, G. E., & Nagy, W. E. (1993). Latino students' concept of cognates. In D.J. Leu & C.K. Kinzer (Eds.). *42nd Yearbook of the National Reading Conference* (pp. 367-374). Chicago: National Reading Conference.
- Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, 38, 915-945.
- Garrison, L., & Mora, J. K. (1999). Adapting mathematics instruction for ELL. *Changing faces of mathematics: Perspectives on Latinos*. Reston, VA: National Council of Teachers of Mathematics.
- Genesee, F., Lindholm-Leary, K., Saunders, W. M., & Christian, D. (2006). *Educating English language learners: A synthesis of research evidence*. Cambridge, UK: Cambridge University Press.
- Genesee, F., & Riches, C. (2006). Literacy: Instructional issues. In F. Genesee, K. Lindholm-Leary, W. Saunders & D. Christian (Eds.), *Educating English language learners: A synthesis of research evidence* (pp. 109-175). Cambridge, UK: Cambridge University Press.

- Glaser, B. (1978). *Theoretical sensitivity: Advances in the methodology of grounded theory*. Mill Valley, CA: Sociology Press.
- Graves, M. F., & Liang, L. A. (2008). Four facets of reading comprehension instruction in the middle grades. *Middle School Journal, 39*(4), 36-45.
- Gutiérrez, R. (2002). Beyond essentialism: The complexity of language in teaching mathematics to Latina/o students. *American Educational Research Journal, 39*, 1047-1088.
- Gutstein, E., Lipman, P., Hernández, P., & de los Reyes, R. (1997). Culturally relevant mathematics teaching in a Mexican American context. *Journal for Research in Mathematics Education, 28*, 26-37.
- Hahn, A. L. (1984). Assessing and extending comprehension: Monitoring strategies in the classroom. *Reading Horizons, 24*, 231-237.
- Hardin, V. B. (2001). Transfer and variation in cognitive reading strategies of Latino fourth-grade students in a late-exit bilingual program. *Bilingual Research Journal, 25*, 417-439.
- Hawley, W. D., & Valli, L. (1999). The essentials of effective professional development: A new consensus. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession* (pp. 127-150). San Francisco: Jossey-Bass.
- Haycock, K. (1998). Good teaching matters: How well-qualified teachers can close the gap. *Thinking K-16, 3*, 1-14.
- Hill, H. C. (2004) Professional development standards and practices in elementary school mathematics. *Elementary School Journal, 104*, 215-31.

- Hill, H. C., & Ball, D. L. (2004). Learning mathematics for teaching: Results from California's mathematics professional development institutes. *Journal for Research in Mathematics Education, 35*, 330-351.
- Hirsh, S. (2006). NSCD standards provide a richer definition of professional development than does NCLB. *National Staff Development Council, 27*, 59-60.
- Huckin, T., Haynes, M., & Coady, J. (1995). *Second language reading and vocabulary learning*. Norwood, NJ: Ablex.
- Idol, L., & Croll, V. J. (1987). Story-mapping training as a means of improving reading comprehension. *Learning Disability Quarterly, 10*, 214-229.
- International Reading Association & National Middle School Association (2001). *Supporting young adolescents' literacy learning: A joint position statement of the International Reading Association and the National Middle School Association*. Newark, DE: International Reading Association. Retrieved on November 2nd, 2006 at http://www.reading.org/downloads/positions/ps1052_supporting.pdf.
- Ivey, G. (1999). A multicase study in the middle school: Complexities among young adolescent readers. *Reading Research Quarterly, 34*, 172-192.
- Jacobs, V. A. (2008). Adolescent literacy: Putting the crisis in context. *Harvard Educational Review 78*, 7-39.
- Jiménez, R. T. (1997). The strategic reading abilities and potential of five low-level literacy Latina/o readers in middle school. *Reading Research Quarterly, 32*, 224-243.

- Jiménez, R. T. (2004). Reconceptualizing the literacy learning of Latino students. In D. Strickland & D. Alvermann (Eds.), *Bridging the literacy achievement gap, grades 4-12*. (pp. 17-29). New York: Teachers College Press.
- Jiménez, R. T., & Barrera, R. (2000). How will bilingual/ESL programs in literacy change in the next millennium? *Reading Research Quarterly*, 35, 522-523.
- Jiménez, R. T., García, G. E., & Pearson, P. D. (1995). Three children, two languages, and strategic reading: Case studies in bilingual/monolingual reading. *American Educational Research Journal*, 32, 31-61.
- Jiménez, R. T., García, G. E., & Pearson, P. D. (1996). The reading strategies of bilingual Latina/o students who are successful English readers: Opportunities and obstacles. *Reading Research Quarterly*, 31, 90-112.
- Kamil, M. (2003). *Adolescents and literacy: Reading for the 21st century*. Washington, D. C.: Alliance for Excellent Education.
- Khisty, L. L. (1995). Making inequality: Issues of language and meanings in mathematics teaching with Hispanic students. In W. Secada, E. Fennema, & L. B. Adajian (Eds.), *New directions for equity in mathematics education* (pp. 279-297). New York: Cambridge University Press.
- Khisty, L. L. (2002). Mathematics learning and the Latino student: Suggestions from research for classroom practice. *Teaching Children Mathematics*, 9(1), 32-35.
- Khisty, L. L., & Morales, H. Jr. (2004). *Discourse matters: Equity, access, and Latinos' learning mathematics*. Retrieved March 21, 2007, from <http://www.icme-organisers.dk/tsg25/subgroups/khistry.doc>.

- Kindler, A. L. (2002). *Survey of the states' limited English proficient students and available educational programs and services: 2000-2001 Summary Report*. Washington, D.C: National Clearinghouse for English Language Acquisition & Language Instruction Educational Programs.
- Kitchen, R. S. (2005). Making equity and multiculturalism explicit to transform mathematics education. In A. J. Rodriguez & R. S. Kitchen (Eds.), *Preparing mathematics and science teachers for diverse classrooms* (pp. 33-60). Mahwah, NJ: Lawrence Erlbaum.
- Klinger, J. K., & Vaughn, S. (1996). Reciprocal teaching of reading comprehension strategies for students with learning disabilities who use English as a second language. *The Elementary School Journal*, 96, 275-293.
- Knight, S. L. (1987). *Investigating the relationship between classroom instruction and students' cognitive strategies*. Unpublished doctoral dissertation, University of Houston, TX.
- Knight, S. L. (1992). Relation between elementary students' perceptions of teacher behaviors and reading strategy. *Journal of Educational Research*, 85, 327-338.
- Knight, S. L., Padrón, Y., & Waxman, H. C. (1985). The cognitive reading strategies of ESL students. *TESOL Quarterly*, 19, 789-792.
- Knight, S. L., & Wiseman, D. L. (2005). Professional development for teachers of diverse students: A summary of the research. *Journal for Education of Students Placed at Risk*, 10, 387-406.

- Knight, S. L., & Wiseman, D. L. (2006). Lessons learned from a research synthesis on the effects of teachers' professional development on cultural diverse students. In K. Téllez & H.C. Waxman (Eds.), *Preparing quality educators for English Language Learners* (pp. 71-98). Mahwah, NJ: Lawrence Erlbaum.
- Langer, J. A., Bartolome, L., Vasquez, O., & Lucas, T. (1990). Meaning construction in school literacy tasks: A study of bilingual students. *American Educational Research Journal*, 27, 427-471.
- Lara-Alecio, R., Galloway, M., Mahadevan, L., Mason, B., Irby, B. J., Brown, G., et al. (2005). *Texas dual language program cost analysis*. Texas Education Agency and The Texas Senate Education Committee. Retrieved March 12, 2007, from <http://ldn.tamu.edu/Archives/CBARReport.pdf>.
- Laufer, B. (1997). The lexical plight in second language reading: Words you don't know, word you think you know, and word you can't guess. In J. Coady & T. Huckin (Eds.). *Second language vocabulary acquisition: A rationale for pedagogy* (pp. 20-34). Cambridge, UK: Cambridge University Press.
- Lee, J. (2006). *Tracking achievement gaps and assessing the impact of NCLB on the gaps: An in-depth look into national and state reading and math outcome trends*. Cambridge, MA: The Civil Rights Project at Harvard University.
- Lee, J., Grigg, W., and Dion, G. (2007). *The Nation's Report Card: Mathematics 2007* (NCES 2007-494). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.

- Lee, J., Grigg, W., and Donahue, P. (2007). *The Nation's Report Card: Reading 2007* (NCES 2007-496). Washington, DC: National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education.
- Leiva, M. A. (2006). Testimony before the National Mathematics Panel on June 29, 2006. Retrieved on April 8, 2007 from <http://data.memberclicks.com/site/toma/LeivaNMPJune06.pdf>.
- Liagas, C., & Snyder, T. (2003). *Status and trends in the education of Hispanics U.S.* (NCES 2003-008). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Little, J. W. (1999). Organizing schools for teacher learning. In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the learning profession* (pp. 233-262). San Francisco: Jossey-Bass.
- Losen, D., Orfield, G., & Balfanz, R. (2006). *Confronting the graduation rate crisis in Texas*. Cambridge, MA: The Civil Rights Project at Harvard University.
- Loucks-Horsely, S., Hewson, P. W., Love, N., & Stiles, K. E. (1998). *Designing professional development for teachers of science and mathematics*. Thousand Oaks, CA: Corwin.
- Loucks-Horsely, S., Love, N., Stiles, K. E., Mundry, S., & Hewson, P. W. (2003). *Designing professional development for teachers of science and mathematics*. Thousand Oaks, CA: Corwin.

- Loxterman, J. A., Beck, I. L., & McKeown, M. G. (1994). The effects of thinking aloud during reading on students' comprehension of more or less coherent text. *Reading Research Quarterly, 29*, 352-367.
- Menken, K., & Atúnez, B. (2001). *An overview of the preparation and certification of teacher working with Limited English Proficient (LEP) students*. Washington, DC: National Clearinghouse for Bilingual Education.
- Menken, K., & Holmes, P. (2000). *Ensuring English language learners' success: Balancing teacher quantity with quality*. National Clearinghouse for English Language Acquisition. Retrieved September 3, 2007 at <http://www.ncele.gwu.edu/pubs/tasynthesis/framing/5teacherquality.pdf>.
- Moore, D. W., Bean, T. W., Birdyshaw, D., & Rycik, J. A. (1999). *Adolescent literacy: A position statement*. Newark, DE: Commission on Adolescent Literacy of the International Reading Association.
- Morrow, L. (1985). Reading and retelling stories: Strategies for emergent readers. *The Reading Teacher, 38*, 870-875.
- Moschkovich, J. N. (1999a). Supporting the participation of English language learners in mathematical discussions. *For the Learning of Mathematics, 19*(1), 11-19.
- Moschkovich, J. N. (1999b). Understanding the needs of Latino students in reform-oriented mathematics classrooms. In L. Ortiz-Franco, N. Hernandez, & Y. De La Cruz (Eds.), *Changing the faces of mathematics*, (pp. 5-12), Reston, VA: National Council of Teachers of Mathematics.

- Moschkovich, J. N. (2002). A situated and sociocultural perspective on bilingual mathematics learners. *Mathematical Thinking and Learning*, 4, 189-212.
- Moschkovich, J. N. (2006). Statement for the National Mathematics Panel on November 6th, 2006. Retrieved on March 12, 2007 from <http://www.ed.gov/about/bdscomm/list/mathpanel/documents/moschkovich-math-panel.doc>.
- Moschkovich, J. (2007). Bilingual mathematics learners: How views of language, bilingual learners, and mathematical communication impact instruction. In N. S. Nassir & P. Cobb (Eds.), *Diversity, equity, and access to mathematical ideas* (pp. 121-144). New York: Teachers College Press.
- Nagy, W. E. (1997). On the role of context in first- and second- language vocabulary learning. In N. Schmitt & M. McCarthy (Eds.), *Vocabulary: Description, acquisition, and pedagogy* (pp. 64-83). Cambridge, UK: Cambridge University Press.
- Nagy, W. E., García, G. E., Durgunoğlu, A. Y., & Hancin-Bhatt, B. (1993). Spanish-English bilingual students' use of cognates in English reading. *Journal of Reading Behavior*, 25, 241-259.
- National Center for Educational Statistics [NCES] (2004). *Language minorities and their educational and labor market indicators-Recent trends, NCES 2004-09*. Washington, DC: U.S. Government Printing Office. Retrieved November 6, 2006, from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2004009>.

National Center for Educational Statistics [NCES] (2007). *NAEP Data Explorer*.

Retrieved November 26, 2007, from <http://nces.ed.gov/nationsreportcard/nde/>.

National Council of Teachers of Mathematics (2002). *Mathematics for second language*

learners. Retrieved September 3, 2007 from <http://www.nctm.org/about/content.aspx?id=6368&itemid=6368&linkindetifier=id>.

National Education Association (2004). *Assessment of diversity in America's teaching*

force: A call to action. National Collaborative on Diversity in the Teaching Force. Retrieved August 30, 2007, at

<http://www.nea.org/teacherquality/images/diversityreport.pdf>.

National Institute of Child Health and Human Development (2000). *Teaching children*

to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction. Washington, DC: U.S.

Government Printing Office. Retrieved February 2, 2007, from

<http://www.nichd.nih.gov/publications/nrp/smallbook.cfm>.

National Staff Development Council (2001). *NSDC's standards for staff development*.

Retrieved on October 11, 2007 at <http://www.nsd.org/standards/index.cfm>.

No Child Left Behind Act of 2001 (2002). Available at www.ed.gov/legislation/

ESEA02/.

Olshavsky, J. (1976-77). Reading as problem-solving: An investigation of strategies.

Reading Research Quarterly, 12, 654-674.

- Olson, C. B., & Land, R. (2007). A cognitive strategies approach to reading and writing instruction for English language learners in secondary school. *Research in the Teaching of English, 41*, 269-301.
- Orfield, G., Losen, D., Wald, J., & Swanson, C. B. (2004). *Losing our future: How minority youth are being left behind by the graduation rate crisis*. Cambridge, MA: The Civil Rights Project at Harvard University.
- Padrón, Y. N. (1985). *Utilizing cognitive reading strategies to improve English reading comprehension of Spanish speaking bilingual students*. Unpublished doctoral dissertation, University of Houston, TX.
- Padrón, Y. N. (1992). The effect of strategy instruction on bilingual students' cognitive strategy use in reading. *Bilingual Research Journal, 16*, 35-51.
- Padrón, Y. N., Knight, S. L., & Waxman, H. C. (1986). Analyzing bilingual and monolingual students' perceptions of their reading strategies. *The Reading Teacher, 39*, 430-433.
- Padrón, Y. N., & Waxman, H. C. (1988). The effect of ESL students' perceptions of their cognitive strategies on reading achievement. *TESOL Quarterly, 22*, 146-150.
- Palinscar, A. S., & Brown, A. L. (1984). Reciprocal teaching of comprehension-fostering and monitoring activities. *Cognition and Instruction, 1*, 117-175.
- Paris, S. G., Lipson, M. Y., & Wixson, K. K. (1983). Becoming a strategic reader. *Contemporary Educational Psychology, 8*, 293-316.

- Paris, S. G., & Myers, M. (1981). Comprehension monitoring, memory, and study strategies of good and poor readers. *Journal of Reading Behavior*, 8, 5-22.
- Parsad, B., Lewis, L, Farris, E., & Greene, B. (2001). *Teacher preparation and professional development: 2000*. (NCES 2001-008). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Pearson, P. D., & Fielding, L. (1996). Comprehension instruction. In R. Barr, M. L. Kamil, P. Mosenthal, & P. D. Pearson, (Eds.), *Handbook of reading research* (Vol. 2, pp. 815-860). Mahwah, NJ: Erlbaum.
- Peregoy, S. F., & Boyle, O. F. (2000). English learners reading English: What we know, what we need to know. *Theory into Practice*, 39, 237-247.
- Perie, M., Grigg, W., & Donahue, P. (2005). *The nation's report card: Reading 2005* (NCES 2006-451). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.
- Pew Hispanic Center (2006). *From 200 million to 300 million: The numbers behind population growth*. Washington, DC: Pew Hispanic Center. Retrieved October 12, 2006 from <http://pewhispanic.org/files/factsheets/25.pdf>.
- Pressley, M. (2000). What should comprehension instruction be the instruction of? In M. L. Kamil, P. Mosenthal, R. Barr, & P. D. Pearson, (Eds.), *Handbook of reading research* (Vol. 3, pp. 545-562). Mahwah, NJ: Erlbaum.

- Pressley, M. (2001, September). Comprehension instruction: What makes sense now, what might make sense soon. *Reading Online* 5(2). Retrieved October 10, 2006, from <http://www.readingonline.org/articles/handbook/pressley/index.html>.
- Pressley, M. (2004). The need for research on secondary literacy education. In J. A. Dole, & T. L. Jetton (Eds.), *Adolescent literacy research and practice*. (pp. 415-432). New York: Guilford.
- Pressley, M., & Afflerbach, P. (1995). *Verbal protocols of reading: The nature of constructively responsive reading*. Hillsdale, NJ: Erlbaum.
- Pressley, M., & Block, C. C. (2002). Summing up: What comprehension instruction could be. In C. C. Block & M. Pressley (Eds.), *Comprehension instruction: Research-based best practices* (pp. 383-392). New York: Guilford.
- Pressley, M., El-Dinary, P. B., Gaskins, I. Schuder, T., Bergman, J., Almasi, L, et al. (1992). Beyond direct explanation: Transactional instruction of reading comprehension strategies. *The Elementary School Journal*, 92, 513-554.
- Pressley, M., Johnson, C. J., Symons, S., McGoldrick, J. A., & Kurita, J. A. (1989). Strategies that improve children's memory and comprehension of text. *The Elementary School Journal*, 90, 3-31.
- Reid, S. (2001). *Texas demographics: The state of change*. The County Information Project: Texas Association of Counties. Retrieved March 12, 2007 from http://www.county.org/resources/countydata/products/TX_Demo/TX_Demographics_Jun2001.pdf.

- Reyes, P. (2007). *Poverty and education*. Presentation to College of Education and Human Development, Texas A&M University on August 29th, 2007.
- Rhoder, C., & Huerster, P. (2002). Use dictionaries for word learning with caution. *Journal of Adolescent and Adult Literacy*, 45, 730-735.
- Rodriguez, A. J. (2005). Teachers' resistance to ideological and pedagogical change: Definitions, theoretical framework, and significance. In A. J. Rodriguez & R. S. Kitchen (Eds.), *Preparing mathematics and science teachers for diverse classrooms* (pp. 33-60). Mahwah, NJ: Lawrence Erlbaum.
- Roe, M. F. (2004). Literacy for middle school students: Challenges of cultural synthesis. *Research in Middle Level Education Online*, 28(1). Retrieved October 21, 2006, from <http://www.nmsa.org/Publications/RMLEOnline/tabid/101/Default.aspx>.
- Rueda, R. (1998). Standards for professional development: A sociocultural perspective. *CREDE Research Brief #2*. Santa Cruz, CA. Retrieved April 25, 2007 from <http://www.cal.org/crede/pubs/ResBrief2.pdf>.
- Sadoski, M., & Paivio, A. (2007). Toward a unified theory of reading. *Scientific Studies of Reading*, 11, 337-356.
- Saxe, G. B., Gearhart, M., & Nasir, N. S. (2001). Enhancing students' understanding of mathematics: A study of three contrasting approaches to professional support. *Journal of Mathematics Teacher Education*, 4, 55-79.
- Secada, W. G. (1992). Race, ethnicity, social class, language and achievement in mathematics. In D.A. Grouws (Ed.), *Handbook of research on mathematics teaching and learning*, (pp. 623-660). New York: MacMillan.

- Shavelson, R. J., & Towne, L. (2001). *Scientific research in education*. Washington, DC: National Academy Press.
- Short, D., & Fitzsimmons, S. (2007). *Double the work: Challenges and solutions to acquiring language and academic literacy for adolescent English language learners – A report to Carnegie Corporation of New York*. Washington, DC: Alliance for Excellent Education.
- Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15, 4-14.
- Singer, H., & Donlan, D. (1982). Active comprehension: Problem-solving schema with question generation for comprehension of complex short stories. *Reading Research Quarterly*, 17, 166-186.
- Snow, C., & Biancarosa, G. (2003). *Adolescent literacy and the achievement gap: What do we know and where do we go from here?* New York: Carnegie Corporation.
- Snow, C. E., Martin, T., & Berman, I. (2008). State literacy plans: Incorporating adolescent literacy. *Harvard Educational Review*, 78, 211-230.
- Southeast Center for Teaching Quality. (2003). High quality professional development: Will states meet the NCLB mandates? *Best Practices and Policies*, 3, 1-2.
- Sparks, D., & Loucks-Horsley, S. (1989). Five models of staff development. *Journal of Staff Development*, 10, 234-250.
- Speck, M., & Knipe, C. (2005). *Why can't we get it right?: Designing high-quality professional development for standards-based schools*. Thousand Oaks, CA: Corwin Press.

- Stahl, S. A., & Fairbanks, M. (1986). The effects of vocabulary instruction: A model-based meta-analysis. *Review of Educational Research, 56*, 72-110.
- Sternberg, R. J. (1987). Most vocabulary is learned from context. In M. G. McKeown & M. E. Curtis (Eds.), *The nature of vocabulary acquisition* (pp. 89-105). Hillsdale, NJ: Erlbaum.
- Swanborn, M. S. L., & de Glopper, K. (1999). Incidental word learning while reading: A meta-analysis. *Review of Educational Research, 69*, 261-286.
- Sweet, A. P. (2005). Assessment of reading comprehension: The RAND reading study group vision. In S.G. Paris, & S.A. Stahl (Eds.), *Children's reading comprehension and assessment* (pp. 3-12). Mahwah, NJ: Erlbaum.
- Sweet, A. P., & Snow, C. E. (2003). Reading for comprehension. In A. P. Sweet & C. E. Snow (eds.), *Rethinking reading comprehension* (pp. 1-11). New York: Guilford.
- Téllez, K., & Waxman, H. C. (2006). Preparing quality teachers for English Language Learners: An overview of the critical issues. In K. Téllez & H. C. Waxman (Eds.), *Improving educator quality for English language learners: Research, policies, and practices* (pp. 1-22). Mahwah, NJ: Lawrence Erlbaum.
- Texas Education Agency [TEA] (2007a). *2006-2007 Statewide TAKS Summary Reports*. Retrieved April 12, 2008, from http://www.tea.state.tx.us/student_assessment/reporting/results/summary/sum07/taks/gr7_apr07_tagged.pdf.
- Texas Education Agency [TEA] (2007b). *Texas English Language Proficiency Assessment System Results*, Spring 2007. Retrieved April 12, 2008, from

http://www.tea.state.tx.us/student.assessment/reporting/results/summary/sum07/telpas/telpas_statewide07_tagged.pdf.

U.S. Census Bureau. (2004). *U.S. interim projections by age, sex, race, and Hispanic origin*. Washington, DC: U.S. Census Bureau, Population Division, Populations Projections Branch. Retrieved October 16, 2006, from <http://www.census.gov/ipc/w/usinterimproj/natproptab01a.pdf>.

U.S. Census Bureau. (2006). *Nation's population to reach 300 million on Oct. 17*. Retrieved November 1, 2006, from <http://www.census.gov/Press-Release/www/releases/archives/population/007616.html>.

U.S. Department of Education, National Center for English Language Acquisition. (2007). *The growing number of limited English proficient students: 1995/96-2005/06*. Retrieved April 21, 2008, from http://www.ncela.gwu.edu/policy/states/reports/statedata/2005LEP/GrowingLEP_0506.pdf.

Vacca, R.T. (1998). Literacy issues in focus: Let's not marginalize adolescent literacy. *Journal of Adolescent and Adult Literacy, 41*, 604-609.

Vaughn, S., & Klinger, J. K. (2004). Strategies for struggling second-language readers. In T. L. Jetton & J. A. Dole (Eds.), *Adolescent literacy research and practice* (pp. 183-209). New York: Guilford.

Wade, S. E. (1990). Using think alouds to assess comprehension. *The Reading Teacher, 43*(7), 442-453.

- Waxman, H. C., & Padrón, Y. N. (2004). The uses of the Classroom Observation Schedule to improve classroom instruction. In H. C. Waxman, R. G. Tharp, & R. S. Hilberg, (Eds.), *Observational research in U. S. classrooms: New approaches for understanding cultural and linguistic diversity* (pp.72-96). Cambridge, UK: Cambridge University Press.
- Waxman, H. C., Padrón, Y. N., & García, A. (2007). Educational issues and effective practices for Hispanic students. In S. J. Paik & H. J. Walberg (Eds.). *Narrowing the achievement gap: Strategies for educating Latino, Black and Asian students* (pp. 131-151). New York: Springer.
- Waxman, H. C., Sparks, K., Wedde, S., Lee, Y. S., Kandel, B. E., & Smith, L. J. (2008). *The development and use of a systematic observation instrument to evaluate teachers' professional development*. Paper presented at the annual meeting of the American Educational Research Association, New York.
- Waxman, H. C., Tharp, R., & Hilberg, R. S. (Eds.). (2004). *Observational research in U. S. classrooms: New approaches for understanding cultural and linguistic diversity*. Cambridge, UK: Cambridge University Press.
- Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad*. Dallas, TX: National Staff Development Council.

- Weinstein, C., & Mayer, R. (1986). The teaching of learning strategies. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 315-327). New York: MacMillan.
- Zumwalt, K., & Craig, E. (2005). Teachers' characteristics: Research on the demographic profile. In M. Cochran-Smith & K. M. Zehler (Eds.), *Studying teacher education*. (pp.111-156). Mahwah, NJ: Erlbaum.

APPENDIX A

Journals Included in Synthesis

American Educational Research Journal

American Journal of Education

Bilingual Research Journal

Child Development

Cognition & Instruction

Education and Urban Society

Educational Researcher

Hispanic Journal of Behavioral Science

Journal of Adolescent and Adult Literacy

Journal of Adolescent Research

Journal of Education for Students Place At-Risk

Journal of Educational Psychology

Journal of Literacy Research

Middle Grades Research Journal

Reading Research Quarterly

Research in Middle Level Education Online

TESOL Quarterly

Urban Education,

Youth & Society

Research Articles Included in Synthesis

Carlo, M. S., August, D., McLaughlin, B., Snow, C. E., Dressler, C., Lippman, D. N., et al. (2004). Closing the gap: Addressing the vocabulary needs of English-language learners in bilingual and mainstream classrooms. *Reading Research Quarterly, 39*, 188-215.

García, G. E. (1991). Factors influencing the English reading test performance of Spanish-speaking Hispanic children. *Reading Research Quarterly, 26*, 371-392.

García, G. E., & Nagy, W. E. (1993). Latino students' concept of cognates. 42nd *Yearbook of the National Reading Conference* (pp. 367-374). Chicago: National Reading Conference.

Jiménez, R. T. (1997). The strategic reading abilities and potential of five low-level literacy Latina/o readers in middle school. *Reading Research Quarterly, 32*, 224-243.

Jiménez, R. T., García, G. E., & Pearson, P. D. (1995). Three children, two languages, and strategic reading: Case studies in bilingual/monolingual reading. *American Educational Research Journal, 32*, 31-61.

Jiménez, R. T., García, G. E., & Pearson, P. D. (1996). The reading strategies of bilingual Latina/o students who are successful English readers: Opportunities and obstacles. *Reading Research Quarterly, 31*, 90-112.

Klinger, J. K., & Vaughn, S. (1996). Reciprocal teaching of reading comprehension strategies for students with learning disabilities who use English as a second language. *The Elementary School Journal, 96*, 275-293.

- Langer, J. A., Bartolome, L., Vasquez, O., & Lucas, T. (1990). Meaning construction in school literacy tasks: A study of bilingual students. *American Educational Research Journal, 27*, 427-471.
- Nagy, W. E., García, G. E., Durgunoğlu, A. Y., & Hancin-Bhatt, B. (1993). Spanish-English bilingual students' use of cognates in English reading. *Journal of Reading Behavior, 25*, 241-259.

Table A-1

Summary of Studies Included in Research Synthesis

Study	Research Questions	Participants	Design	Findings
García, G. E. (1991).	What are the factors that influence Spanish-speaking Hispanic children's English reading test performance?	104 fifth- and sixth-graders (51 bilingual Hispanic; 53 monolingual English-speaking Anglo) receiving all English instruction	Comparative study utilizing quantitative measures of reading comprehension, vocabulary and prior knowledge along with open-ended interviews.	Anglo students demonstrated statistically significantly higher test-specific vocabulary knowledge, general vocabulary knowledge, and total vocabulary knowledge. A sub-sample of Hispanic students could not identify many content words in a reading passage and misinterpreted known vocabulary which may have impeded reading test performance.
Nagy, W. E., García, G. E., Durgunoğlu, A. Y., Hancin-Bhatt, B. (1993)	How do Spanish vocabulary knowledge and ability to identify Spanish-English cognates relate to Hispanic bilingual	74 fourth- ($n=29$), fifth- ($n=33$), and sixth- ($n=12$) grade Spanish-English bilingual,	Non-experimental design utilizing Spanish and English vocabulary tests, questionnaire to	Students identified a small proportion of the total Spanish-English cognates. There is a strong, positive correlation between Spanish vocabulary

	students' comprehension of English expository text?	biliterate students	access students' experiences with English and Spanish, a target-word multiple choice test, and a cognate-circling task.	knowledge and English multiple-choice test performance for students who are skilled at identifying Spanish-English cognates. In contrast, there is a strong, negative relationship between Spanish vocabulary knowledge and English multiple-choice knowledge for students who are not adept at Spanish-English cognate identification.
García & Nagy (1993)	<p>What is the nature of students' concepts of cognates?</p> <p>What is the nature and extent of variation amongst students regarding cognate recognition?</p> <p>What is the relationship between students' understanding of</p>	<p>81 Spanish-English bilingual students: 32 4th-graders 36 5th-graders 13 6th-graders</p>	<p>Non-experimental design utilizing Spanish and English vocabulary tests, questionnaire to access students' experiences with English and Spanish, a target-word multiple choice test, and a cognate-circling task.</p>	<p>Student variability in cognate identification related to students' understanding of cognates and motivation for task.</p> <p>Even when students knew both English and Spanish words meanings, they did not always circle the cognate, suggesting that cognate understanding is not "automatic" for bilinguals.</p> <p>Students relied heavily on</p>

	cognates and their English text processing?			orthographic and semantic clues to identify cognates and did not seem to take morphology into account.
Carlo, August, McLaughlin, et al. (2004)	To what extent do improvements in vocabulary (both knowledge and strategies) relate to improvements in reading comprehension for ELLs?	254 (142 ELLs; 112 English monolinguals) 5 th graders	This quasi-experimental study randomly assigned classrooms to vocabulary intervention and control groups. Pre-test and post-test measures included Peabody Picture Vocabulary Test Revised (PPVT-R), polysemy production, reading comprehension, word knowledge and association, and morphology.	Intervention group showed greater growth than did the control group for word knowledge, depth of vocabulary knowledge, polysemy and reading comprehension. Additionally, the intervention effects were just as large for ELLs as for English monolinguals. However, effect size of .08 for reading comprehension signifies the intervention did not reach practical significance. The intervention did approach practical significance for word mastery with an effect size of .34.

Jiménez, García, & Pearson (1995)	What is the cognitive and metacognitive knowledge of a proficient bilingual reader?	3 sixth-grade students (one bilingual reader proficient in English reading, one bilingual reader not proficient in English reading and one proficient monolingual English reader.)	Case study design including prior knowledge assessment of text topics, interview protocols with questions about reading strategies use and prompted and unprompted think alouds	The successful bilingual reader exhibited: a) Primarily, a word-driven approach to reading with a heavy focus on vocabulary as means to comprehension when reading in English that led her use of other strategies: b) Positive view of her L1 in relation to her L2 reading abilities including a reliance on cognates between L1 and L2 that is unique to bilingual readers
Jiménez, García & Pearson (1996)	How does Spanish/English bilingualism and biliteracy affect, and even enhance, metacognition?	14 sixth- and seventh- grade students (8 Latino/a students who were successful English readers; 3 Latino/a students who were marginally successful English readers	Non-experimental three group comparison: poor bilingual, strong bilingual and strong monolingual with data collected through prior knowledge and vocabulary task, background	Successful bilingual readers: a) Unitary view of reading in both Spanish and English b) Knowledge of bilingual reading strategies: use of cognates, transfer translation c) strategic approach to reading that includes a strong focus on resolving unknown vocabulary.

Langer, Bartolome, Vasquez, & Lucas (1990)	<p>What meaning-making strategies did students use in their comprehension process when they read Spanish and English texts and how did those strategies influence their comprehension?</p> <p>How did their vocabulary understanding affect their envisionment buildings?</p>	<p>(These 11 had varying degrees of bilingualism, but overall most were stronger in English than Spanish); 3 monolingual Anglo successful English readers 12- fifth-grade bilingual students whose L1 is Spanish</p>	<p>questionnaire, unprompted think aloud, text retellings and interview</p> <p>Non-experimental study with data collected through student interviews, open-ended during reading questioning, post-reading probing questions, transcripts, field notes and student writing samples</p>	<p>d) Less use of prior knowledge in reading Spanish and more use of monitoring in Spanish (possibly due to less exposure to content materials in Spanish)</p> <p>Use of good meaning-making strategies influenced how well students comprehended in English and Spanish</p> <p>Use of meaning-making strategies rather than level of English fluency was more important in differentiating proficient readers from less proficient readers</p> <p>Students relied on their Spanish when reading in English; however, the reverse rarely occurred</p> <p>Genre affected ability to</p>
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Klinger, J. K., & Vaughn, S. (1996)	<p>What was the relationship between the students' test scores and their ability to envisionment build?</p> <p>What is the effect of two approaches (reciprocal teaching with cross-age tutoring & reciprocal teaching with cooperative grouping) for providing reading comprehension strategy instruction to seventh- and eighth- grade ESL students on comprehension of English text?</p>	26 ⁷ th - & 8 th grade native Spanish-speaking ESL students with learning disabilities	Experimental design with random assignment to one of two interventions. Pretest and posttest data were collected through two reading comprehension measures, and strategy interviews, while qualitative data was gathered through student and researcher daily logs and focus groups with participants.	<p>understand (with reports being more difficult than stories)</p> <p>The type of questions asked influence students ability to communicate understanding.</p> <p>Both groups showed statistically significant average gains (with wide individual variation) in reading comprehension from pre-test to post-test. Results demonstrated no statistically significant between-group differences for reading comprehension.</p> <p>Analysis of qualitative data revealed that initial reading ability and language proficiency were important components in understanding which students benefited most from strategy instruction. Students with low decoding skills and limited English oral</p>
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Jiménez, (1997)	What can teachers do to meet the needs of middle school low literacy ELLs without stigmatizing them?	5 Latino middle school students (3 were bilingual Spanish/English and received instruction primarily in special education classroom; 2 were bilingual, but Spanish dominant and were in an at-risk classroom)	Non-experimental study utilizing qualitative data collection methods of classroom observations, student and teacher interviews, think alouds and a formative experiment consisting of strategy lessons focusing on unknown vocabulary, use of prior knowledge and formulating questions	<p>language proficiency generally tended to benefit less from strategy instruction.</p> <p>Students demonstrated some literacy strengths such as positive reactions to and interest in culturally relevant texts</p> <p>Students reacted positively to inclusion of their L1 in instruction and took advantage of opportunities to rely on both languages in order to demonstrate understanding.</p> <p>Following the strategy lessons, students, showed potential towards metacognition including a broader understanding of the purpose of reading as well as specifically naming reading strategies used</p>
	a) What do low-literacy middle school Latino students know about reading?			
	b) What strengths do they possess that might facilitate literacy learning?			
	c) How do they respond to cognitive strategy lessons?			

APPENDIX B

Table B-1

Overall Mean and Standard Deviation for Each RSQ Item

Strategies	<i>M</i> (<i>n</i> = 848)	<i>SD</i>
Keep a picture of the story in my mind +	2.96	1.02
Think about what I am reading	2.87	0.96
Read slowly and carefully	2.74	0.92
Think about what's going to happen next +	2.68	0.94
Imagine a movie in my mind +	2.52	1.10
Underline important parts +	2.33	1.11
Ask questions about parts that I don't understand +	2.27	0.89
Remember the interesting parts and skip others	2.24	0.89
Check to see if I remember. +	2.21	0.92
Skip parts I don't understand	2.04	0.97
Ask a friend for help if I don't understand	2.04	0.90
Make a self to text connection +	2.03	0.90
Look for things that are different	1.99	0.90
Re-read story	1.97	0.68
Re-tell in my own words +	1.95	0.95
Ask myself questions +	1.87	0.88
Look up words in the dictionary	1.80	0.83
Read as fast as I can	1.80	0.87
Repeat the words in the story	1.78	0.87
Repeat main ideas	1.75	0.85

Note. Successful strategies are noted with a +.

Table B-2

Differences on RSQ between ELLs and non-ELLs

Strategy	ELL (n = 426)		Non-ELL (n = 422)		t-value
	M	SD	M	SD	
Re-read story	2.00	0.64	1.93	0.72	1.371
Remember the interesting parts and skip others	2.22	0.87	2.26	0.91	-.674
Keep a picture of the story in my mind +	2.92	1.04	3.00	0.99	-1.180
Read slowly and carefully	2.74	0.92	2.73	0.93	.039
Think about what I am reading	2.88	0.97	2.85	0.95	.377
Look for things that are different	2.00	0.89	1.98	0.90	.270
Retell in my own words +	1.96	0.94	1.95	0.96	.117
Ask myself questions +	1.84	0.86	1.91	0.90	-.997
Skip parts I don't understand	2.10	0.96	1.98	0.97	1.918*
Read as fast as I can	1.80	0.90	1.80	0.84	.071
Think about what's going to happen next +	2.68	0.95	2.68	0.93	-.003
Make a self to text connection +	2.04	0.89	2.02	0.92	.185
Ask a friend for help if I don't understand	2.07	0.93	2.01	0.86	.999
Check to see if I remember +	2.16	0.89	2.25	0.94	-1.375
Repeat main ideas	1.77	0.84	1.73	0.86	.809
Imagine a movie in my mind +	2.51	1.12	2.52	1.08	-.112
Look up words in the dictionary	1.86	0.80	1.74	0.84	2.118*
Underline important parts +	2.35	1.10	2.32	1.12	.361
Ask questions about parts that I don't understand +	2.30	0.93	2.23	0.85	1.041
Repeat the words in the story	1.82	0.88	1.73	0.84	1.635

*p < .05; *Note.* Successful strategies are noted with a +. *Note.* ELL = students currently or formerly identified as English language learners; non-ELL = students never identified as English language learners

Table B-3

Differences on RSQ by Reported Reading Grade

Strategy	A (n = 171)		B (n = 350)		C (n = 184)		D's and below (n = 118)		F	η^2
	M	SD	M	SD	M	SD	M	SD		
Re-read story	2.11a	0.79	1.94ab	0.65	1.88b	0.62	1.95ab	0.70	3.80*	0.13
Remember the interesting parts and skip others	2.20	0.88	2.26	0.89	2.31	0.87	2.17	0.88	0.81	
Keep a picture of the story in my mind +	3.18a	0.96	2.98a	0.99	2.89ab	1.04	2.68b	1.06	6.20***	0.13
Read slowly and carefully	2.84	0.89	2.72	0.89	2.76	0.93	2.58	1.05	1.82	
Think about what I am reading	3.13a	0.94	2.83b	0.91	2.78b	0.99	2.69b	1.00	6.48***	0.16
Look for things that are different	2.16a	0.88	1.97ab	0.88	1.98ab	0.93	1.81b	0.91	3.67*	0.11
Retell in my own words +	1.97	0.93	1.96	0.96	1.95	0.95	1.86	0.96	0.36	
Ask myself questions +	1.96	0.89	1.88	0.89	1.88	0.87	1.74	0.86	1.51	
Skip parts I don't understand	1.90a	0.95	1.96ab	0.90	2.24b	1.00	2.24bc	1.05	6.49***	0.14
Read as fast as I can	1.70a	0.82	1.78ab	0.86	1.81ab	0.82	2.00b	1.04	2.89*	0.08
Think about what's going to happen next +	2.79a	0.91	2.70ab	0.90	2.68ab	0.98	2.44b	1.05	3.19*	0.12
Make a self to text connection +	2.13	0.92	2.05	0.90	1.98	0.86	1.85	0.98	2.44	
Ask a friend for help if I don't understand	2.06	0.80	2.01	0.90	2.08	0.95	2.02	0.93	0.35	
Check to see if I remember +	2.25	0.92	2.18	0.95	2.28	0.87	2.13	0.90	0.93	
Repeat main ideas	1.75	0.85	1.73	0.85	1.79	0.86	1.70	0.86	0.27	
Imagine a movie in my mind +	2.73a	1.11	2.55ab	1.07	2.35b	1.11	2.33b	1.12	4.80**	0.13
Look up words in the dictionary	1.83	0.87	1.82	0.76	1.84	0.86	1.64	0.86	1.68	
Underline important parts +	2.38	1.16	2.30	1.10	2.37	1.11	2.29	1.13	0.32	
Ask questions about parts that I don't understand +	2.40	0.91	2.20	0.85	2.30	0.91	2.21	0.91	2.35	
Repeat the words in the story	1.79	0.86	1.79	0.87	1.84	0.91	1.63	0.79	1.49	

* $p < .05$; ** $p < .01$; *** $p < .001$; *Note.* Successful strategies are noted with a +. *Note.* Means with the same letter are not significantly different. The letters A, B, C and D and below, refer to the grade students reported most often receiving in reading.

APPENDIX C

Table C-1

Percentage of Time Instructional Orientations and Practices Observed

Observation item	Not observed	Rarely evident	Somewhat evident	Highly evident
Instructional Orientation				
Direct instruction/whole group	0	5	70	25
Independent/individual work	30	66	5	0
Group work	2	7	48	43
Collaborative learning	0	0	27	70
Experiential/Hands-on learning	7	2	57	34
Instructional Practices				
Explained activities within the context of the objectives	0	32	61	7
Defined terms and key vocabulary	14	55	30	2
Asked higher-level questions	0	14	77	9
Gave higher level feedback	0	18	77	5
Summarized main points	0	7	73	20
Facilitated group work	5	5	48	43
Used activities to demonstrate content/concepts	0	9	32	59
Connected with participants' prior knowledge and experience	0	7	11	82
Technology used	2	66	20	11
Used manipulative materials	5	20	64	11
Allowed opportunities for participants' questions	0	18	64	18

Table C-2

Components Included in National Standards and Observed in the Professional Development Program

	Observed in professional development program
Standards for professional development	
Standards common to NCLB and NSDC	
Is part of systematic educational improvement	
Is sustained, intensive and classroom-focused	
Includes regular evaluation of impact	X
Standards unique to NCLB	
Develops content knowledge	X
Provides teachers skills and knowledge for students to meet academic and achievement standards	X
Supports recruitment, hiring and retention of teachers	
Advances understanding of effective/research-based teaching strategies	X
Is aligned with state standards	X
Developed with extensive participation of stakeholders	X
Provides knowledge/skills for working with ELLs	
Includes technology as appropriate	
Instructs in teaching methods for special needs students	
Addresses parental involvement	
Standards unique to NSDC	
Is data-driven	
Promotes teacher collaboration	
Includes school leadership	
Includes resources to support adult learning	
Provides knowledge of application of research to practice	X

Table C-3

Percentage of Time Observed

Observation item	Not observed	Rarely evident	Somewhat evident	Highly evident
Explained content appropriateness for English language learners	32	52	16	0
Explained content appropriateness for lower-achieving learners	27	59	14	0
Addressed students' misconceptions	57	41	2	0

Table C-4

Use of Instructional Practices Appropriate for ELLs

Instructional practice	Addressed in professional development sessions
Use of students' first language	
Connections to and focus on language	Only in K-2 sessions
Focus on mathematical communication	X
Student-centered (real life applications; culturally relevant)	

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