A MIXED STUDY OF THE IMPACTS OF AN IBA INTERVENTION ON THE VOCABULARY DEVELOPMENT OF CULTURALLY AND LINGUISTICALLY DIVERSE STUDENTS

by

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B.S., Iowa State University, 1995
M.A., University of Central Missouri, 1997

AN ABSTRACT OF A DISSERTATION

Submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Curriculum & Instruction
College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2008

Abstract

This quasi-experimental study was designed to measure the effects of a research-based intervention on fourth and fifth grade culturally and linguistically diverse students' vocabulary development. Through the extensive review of literature on vocabulary instruction and second language acquisition, a substantive theoretical framework titled the IBA Framework was developed. The IBA Framework incorporates characteristics of effective vocabulary instruction by accessing students' background knowledge, connecting unknown vocabulary words to known knowledge, ensuring opportunities for meaningful use of the vocabulary words, providing multiple exposures, and focusing on higher-level word knowledge. The IBA Framework also addresses second language acquisition by incorporating the linguistic, academic, cognitive, and sociocultural processes of the prism model. The IBA Intervention, derived from the IBA Framework, examined the affect of targeted vocabulary strategies on the overall vocabulary development of Culturally and Linguistically Diverse (CLD) students.

Quantitative and qualitative methodologies were utilized for data collection and analysis. Quantitatively, the affect of the IBA Intervention was measured by the Measurement of Academic Progress (MAP) assessment and the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE). MAP assessment scores were used to measure the overall literacy achievement of CLD students. Analysis of the data indicated that the treatment group made greater gains than the control group. ESCRIBE was used to measure students' overall engagement. The affect of the IBA Intervention was measured by combining the results of three student variables: language initiating/responding behaviors, oral responses, and activity-related responses. The overall engagement scores indicated that CLD students who received the IBA Intervention had higher levels of engagement than the control group.

Qualitatively, the affect of the IBA Intervention on students' vocabulary retention was investigated using student documents, participant observation, and informal interviews. The emic perspective that emerged from the data suggested that students in

the intervention group demonstrated their vocabulary retention by building vocabulary knowledge, clarifying vocabulary knowledge, extending vocabulary knowledge, and using vocabulary knowledge across settings. Exemplars from each of these categories were provided as evidence of the CLD students' attainment of a deeper level of permanent vocabulary knowledge.

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Chapter 1 - INTRODUCTION

This chapter provides an overview of the key issues related to culturally and linguistically diverse (CLD) students' vocabulary development, which is the focus of this study. The first section of this chapter provides an overview of the issues and introduces the theoretical foundation for the study. The second section states the problem. The third section of the chapter discusses the purpose and research questions of the study. The fourth section of the chapter discusses the significance of the study. The fifth section outlines the study's potential limitations. The sixth section provides a definition of key terms and is followed by the chapter summary.

Overview of the Issues

The number of CLD students has steadily increased over the past decade. Most CLD students speak Spanish as their first language; however, there are many students who speak one of the four hundred other languages represented in the U.S. school system (NCELA, 2004). Most CLD students are born in the United States, but close to half of CLD student in grades six through twelve are foreign born (Capps, Fix, Murray, Passel, & Herwantoro, 2005). Over the past decade, the number of CLD students enrolled in public schools in the United States has increased by 105% (Kindler, 2002). This increase is projected to continue for the next several decades. By the year 2030, 40% of school-aged students are expected speak a language other than English (U.S. Census Bureau, 2000). Some use the term English language learners, or ELL students, to refer to individuals who are in the process of transitioning from a home or native language to English. However, the preferred term is CLD when referring to students whose culture or language is different from other grade-level students. CLD is more inclusive and emphasizes both the cultural and linguistic assets that a student brings to the classroom environment (Herrera & Murry, 2005).

As educators in the public school setting are encountering increasing populations of CLD students, they are also facing the pressures of accountability as a result of standards-based assessments. Second language learners are one of the major sub-groups

of the school population that is monitored closely under the requirements of the 2001 Elementary and Secondary Education Act, *No Child Left Behind Act*. Educators who may not have had professional training in second language acquisition are now held accountable for the academic achievement of these students. Grade-level teachers have to address the *double demands* on CLD students, who are learning the English language while learning traditional academic content (Gersten & Jimenez, 1994). It is estimated that nearly half of grade-level educators with CLD students in their classrooms have not received any preparation in English as a second language methods and teaching techniques (Garcia, 1994). Only one in five teachers involved in a national survey reported that they felt *very well prepared* to work in today's classroom setting. Furthermore, only 20% said they were confident in working with students from diverse backgrounds, with limited English proficiency, or with disabilities (National Center for Educational Statistics, 2003).

According to Grant and Wong (2003), "As the population of language-minority students grows and higher levels of literacy are expected for all students, more must be done to help English learners achieve educational parity with native English speakers" (p. 386). National data confirms that there is a large academic gap that continues to grow between the reading performance of native-English-speaking students and second language learners, such as native-Spanish-speaking students. Fourth-grade performance on the National Assessment of Educational Progress (2002) reading test shows a 22-29 point-scale score advantage for students from English-only homes as compared with students who speak another language in the home environment.

The Reading First Initiative, an outgrowth of No Child Left Behind (2002) legislation, provides funding to school districts to establish literacy programs that implement research-based strategies. Vocabulary development was identified in this legislation as one of the critical building blocks for teaching children to read. Since this legislation, there has been a great deal of emphasis placed on vocabulary development and its effects on reading comprehension. As Brabham and Villaume (2002) note, "In classrooms across the country, teachers are rethinking the teaching of vocabulary, and teacher educators are voicing the need to address vocabulary instruction more deliberately in one's teaching" (p. 264).

It is well documented that the relationship between reading comprehension and vocabulary knowledge is strong and reciprocal (Baker, Simmons, & Kameenui, 1998). Without the foundational knowledge of English vocabulary, CLD students have a hard time comprehending text. Research focused on school-aged CLD students concluded that vocabulary knowledge is the single best predictor of their academic achievement across subject matter domains (Saville-Troike, 1984).

Differences in vocabulary development begin when students are very young. According to Hart and Risley (1995), a child from a lower socioeconomic status (SES) family hears about 3 million words a year while a child from a professional family household hears 11 million words. By the time the children in the study group were four years old, the gap of vocabulary words heard in particular households had widened. In the lower SES households 13 million words were heard, whereas in the upper SES households 45 million words were heard. The discrepancies in vocabulary knowledge that exist between students upon their entrance to school become larger over time (Biemiller & Slonim, 2001). Many CLD students who speak a language other than English come from lower SES families. Grade-level teachers who have not been adequately prepared to work with CLD students in their classrooms frequently experience difficulty in addressing the complexities surrounding effective instruction for these students and closing the vocabulary and achievement gap.

Research that has been conducted with CLD students indicates that what is known and effective about vocabulary instruction for native English speakers applies also to second language learners (August, 2004; Carlo, August, McLaughlin, Snow, Dressler, Lippman, Lively, & White, 2004; Padak, 2006). However, the National Literacy Panel's (August, 2004) preliminary results indicate that there are some differences that exist between the two language groups of students. Exploring the question of vocabulary development with second language learners, therefore, requires extending vocabulary research to include second language learners as a sub-group of the total population of students who are learning in the grade-level classroom setting.

Statement of the Problem

Beck, McKeown, and Kucan (2002) found that students who enter fourth grade with significant vocabulary deficits show increasing problems with reading comprehension. The research suggests that instead of catching up, these students increasingly fall behind. Moreover, the existence of an academic achievement gap between CLD students and native-English-speaking students is underscored by the 2002 National Assessment of Educational Progress (NAEP) reading results (Grigg, Daane, Jin, & Campbell, 2003). These results show that, as a group, students of diverse backgrounds have fallen four years behind their grade-level peers in reading achievement by the time they reach the twelfth grade. Without sufficient understanding of English vocabulary and academic language, competition with native-English-speaking students is difficult for CLD students. Based on this research, the study was developed to examine the vocabulary development needs confronting CLD students in fourth and fifth grade who are at a higher risk of academic underachievement.

Purpose of the Study

A publication by the International Reading Association (2007) developed in conjunction with the National Institute of Child Health and Human Development states that there is a great need for more and better research in the vocabulary instruction of second language learners. This dissertation study is a step toward a more intentional and proactive study of effective vocabulary instruction for CLD students. This study utilized the IBA Framework, which was created specifically for this study. The IBA Framework details the substantive theoretical framework for this study and is based on an extensive review of vocabulary instruction and second language acquisition literature. The acronym IBA reflects the need to **I**gnite CLD students' engagement and activation of prior and background knowledge, **B**ridge the known to the unknown information through meaningful and multiple exposures to academic vocabulary, and **A**ssociate the vocabulary knowledge to ensure that it moves to students' permanent memory bank. In Spanish, IBA means *to go*. The IBA Framework provides the instructional context needed for CLD students to go and move forward in achieving academic success.

The IBA Framework incorporates characteristics of effective vocabulary instruction (Allen, 1999; Carr & Wixson, 1996; Nagy, 1998; Watts, 1995) by

(a) accessing students' background knowledge, (b) connecting unknown vocabulary words to known knowledge, (c) ensuring opportunities for meaningful use of the vocabulary words, (d) providing multiple exposures, and (e) focusing on higher-level word knowledge. The IBA Framework also addresses second language acquisition by incorporating the linguistic, academic, cognitive, and sociocultural processes of the prism model (Thomas & Collier, 1997). Each of these aspects of the framework is discussed in greater detail in Chapter Two.

By using the IBA Framework, grade-level teachers ensure that their vocabulary instruction takes into account CLD students' native and English language proficiencies, cultural patterns, and levels of content knowledge. This new framework is centered around targeted vocabulary strategies, which encompass each of these aspects of effective vocabulary instruction as well as second language acquisition. The IBA Framework facilitates a better understanding of how activating the background and prior knowledge of CLD students through targeted vocabulary strategies leads to a higher level of student engagement, which in turn leads to a higher level of vocabulary retention. This dissertation study sought to understand the IBA Framework in practice.

IBA Intervention

The IBA Intervention reflected a synthesis of knowledge about best practices with the targeted outcome of increased vocabulary knowledge among CLD students. The IBA Intervention was based on the IBA Framework and reflected the latest research and analyses of literature regarding vocabulary considerations for CLD students. The IBA Intervention involved grade-level teachers' implementing vocabulary strategies that activate and connect students' prior and background knowledge to the new vocabulary words being introduced in the classroom. As demonstrated by research related to vocabulary development, connecting students' prior and background knowledge to new vocabulary leads to increased vocabulary knowledge (Manning, 1999; Marzano, 2004; Nagy, 1998; Pearson & Spiro, 1982; Rupley, Logan, & Nichols, 1999). Through the IBA Intervention, the grade-level teachers promoted explicit connections before, during, and after the vocabulary lesson using a variety of strategies: Dots, Word Splash, Vocabulary Quilt, Linking Language, U-C-Me, Mind Map, Vocabulary Foldables, and Rivet Books

(Beers, 2003; Buzan, 1989; Cunningham, Hall, Cunningham, 2000; Herrera, 2007; Herrera, Kavimandan, Perez, & Wessels, 2008; Montano-Harmon, 2001). The vocabulary strategies used reflect the current literature and are specifically designed to increase CLD students' engagement through social and academic collaborations with their grade-level peers. Each of the components of the IBA Intervention is examined in detail in Chapter Two.

Research Questions

This study sought to answer the following three questions:

Quantitative Research Question One:

To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' literacy achievement as measured by the Measures of Academic Progress (MAP) assessment?

Null Hypothesis:

There will be no significant difference in literacy achievement, as demonstrated in the change from the pre-intervention to post-intervention MAP assessment scores, between the treatment group and the control group.

Quantitative Research Question Two:

To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' engagement as measured by the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE)?

Null Hypothesis:

There will be no significant difference in the student engagement, as demonstrated by ESCRIBE scores, between the treatment group and the control group.

Qualitative Research Question:

In what ways does implementation of the IBA Intervention, which is based on the IBA Framework, affect CLD students' retention of vocabulary?

Significance of the Study

This study is both theoretically and practically significant. At the theoretical level, this study will help address the existing gap in the field related to knowledge of best practice in teaching vocabulary to CLD students. At the practical level, this study is

significant because of the implications the IBA Intervention has for CLD students' vocabulary development. This study has implications for the way grade-level teachers address vocabulary instruction in their classrooms with second language learners.

Theoretical Significance

As previously stated, there has not been enough research on how best to teach vocabulary to CLD students. This study developed and rationalized an integrated framework and a new approach to foundational vocabulary development grounded in the framework. The IBA Framework is a product of the integration of what we currently know about best practices of effective vocabulary instruction (Allen, 1999; Carr & Wixson, 1996; Nagy, 1998; Watts, 1995) as well as second language acquisition, as summarized through the prism model (Thomas & Collier, 1997).

It is argued and rationalized that the IBA Framework accounts for and utilizes vocabulary strategies that increase student engagement and use of academic vocabulary needed for higher retention of vocabulary word knowledge. Therefore, the findings of this study, which are discussed in Chapter Four, will contribute new information to the literacy field by providing critical information on how activating CLD students' background and prior knowledge through vocabulary strategies leads to higher engagement and retention of academic vocabulary. In addition, the IBA Framework provides a theoretical basis for developing new vocabulary teaching techniques.

Practical Significance

At the level of practical significance, the findings from this study have implications for teacher educators of pre-service programs, staff developers, and grade-level and content-area teachers. The findings may prompt changes in the delivery of vocabulary instruction in teacher education programs and grade-level classrooms.

Teacher educators in pre-service programs are informed of the types of vocabulary strategies and instructional contexts that should be used to increase the engagement level of CLD students and ultimately yield a higher level of academic vocabulary retention. The results of this study inform staff developers about a potential need to increase the professional development of in-service teachers with regard to vocabulary development in grade-level or content-area classrooms.

The IBA Framework serves as a guide for vocabulary instruction with CLD students regardless of the reading program implemented in the classrooms. Teachers use grade-level literacy anthologies as the source for vocabulary words to be emphasized during the targeted vocabulary strategies highlighted in the IBA Intervention.

An analysis of students' vocabulary work samples and vocabulary word usage support teachers in selecting vocabulary strategies that maximize CLD students' oral and written academic language production. The results of this study will help educators understand which kinds of vocabulary strategies tend to promote the development of higher vocabulary usage and engagement leading to students' higher retention of vocabulary knowledge. Study results also support educators in being more intentional in how and when they use vocabulary strategies with CLD students, the fastest growing student population in the United States.

Limitations of the Study

The quasi-experimental research design for this study is detailed in Chapter Three, which discusses the fact that issues of trust, rapport, and access were well established (Krathwohl, 1998). Moreover, the rigor and validity of the study were enhanced through the qualitative and quantitative data collection. An extensive review of the literature also was incorporated to minimize the limitations of this study. Despite these efforts, this study has several inherent limitations. As Chapter Three suggests, one limitation of the study is related to the participant selection process. In order to identify participants who would best represent the target population of this study, purposive sampling (Krathwohl, 1998) was used.

A second limitation was the time of year the IBA Intervention was implemented. The IBA Intervention started at the beginning of the second semester of the academic school year and continued for two months, which lead up to the beginning of state and district standardized testing. Throughout the IBA Intervention, the grade-level teachers were required to incorporate test preparation exercises to help students enhance their test taking skills and prepare for the state assessments. These requirements took some literacy time away from the teachers' already educationally-filled academic day as well as anxiety and stress about their students' need to perform well on the assessments.

A third limitation of the study was the subjectivity of some of the behavioral codes in ESCRIBE, the quantitative data collection tool. Although inter-rater reliability with the developer of the instrument was established before the study began, the coding categories themselves were sometimes dependent on the observer's interpretation of the student behavior. For instance, although language production codes such as reading aloud or academic talk were fairly straightforward in observer interpretation, language reception codes such as student attention were more problematic. While students may have appeared to be listening to the teacher or another student speaking, they actually may have been thinking about things other than the education task. However, this limitation was minimized by the qualitative data collected, which indicated, for example, the students' understanding and usage of the vocabulary words. Also, throughout the data collection process, there was not an inter-rater reliability check with another researcher trained in ESCRIBE.

Definition of Key Terms

The following terms are used throughout the description of the study:

Academic English: Academic English includes vocabulary beyond that which is used in social conversations. It is the vocabulary needed to communicate effectively in content-area classes and to comprehend texts in various content areas (AERA, 2004).

Academic processes of the prism model: The academic processes involve grade-level curriculum, instruction, and assessments (Thomas & Collier, 1997).

Affective filter: The affective filter is an emotional screen that can block language acquisition if the learner is anxious or has a high level of anxiety toward learning (Krashen, 1982).

Background knowledge: Background knowledge is what a person already knows academically about a topic. Background knowledge includes such areas as a person's traditional school knowledge related to school subjects and academic achievement (Marzano, 2004).

Basic interpersonal communication skills (BICS): BICS encompasses the social language skills needed for casual conversation in everyday situations and circumstances (Cummins, 2001).

Cognate: A cognate is a word that has a similar phonetic spelling in English as a word in the learner's native language, with both words being related in meaning.

Cognitive academic language proficiency (CALP): CALP is the academic language ability needed for learning academic skills and concepts that are deeper conceptual and cognitive structures (Cummins, 2001).

Cognitive processes of the prism model: The cognitive processes involve the use of cognitive, metacognitive, and social affective learning strategies in problem solving and critical thinking (Chamot & O'Malley, 1994).

Comprehensible input: Comprehensible input is the result of any technique that makes information understandable to a person (Krashen, 1982). Comprehensible input comes in the form of modeling, visuals, hands-on activities, real objects, gestures, body language, and so forth.

Culturally and linguistically diverse (CLD): CLD is a term used to describe a person whose culture and language differ from that of the dominant group.

Common underlying proficiency (CUP): CUP refers to an individual's conceptual knowledge, upon which skills are built in the person's first and second language.

Direct vocabulary instruction: Direct instruction refers to the explicit and intentional teaching of concepts and vocabulary to students by modeling and involving students in word learning instruction.

Effective vocabulary instruction: This type of instruction activates a student's background and prior knowledge, makes connections between known words and the unknown information being taught, provides students with opportunities for meaningful use, and ensures multiple exposures to the words leading to higher-level word knowledge.

Engagement: Engagement is the active process where CLD students are active in and accountable for academic learning through vocabulary strategies that access background and prior knowledge using meaningful interactions that build upon and extend the students' English language skills and target vocabulary knowledge.

English language learner (ELL): ELL is a term used to describe a person who is learning English as a second language.

Grade-level: The term grade-level will be used instead of *mainstream* when referring to students in the classroom. The use of the term mainstream implies that students who speak a language other than English or whose culture is different from that of the dominant culture are not part of mainstream society for whom school systems are designed (Herrera & Murry, 2005).

Grouping configurations: The arrangements of cooperative learning opportunities, which include whole-class teaching, large and small-group instruction, pair activities, and individual work (Echevarria, Vogt, & Short, 2004).

Higher-level word knowledge: This level of word knowledge refers to a deep understanding of vocabulary that can be applied in multiple contexts and genres.

Indirect vocabulary instruction: Indirect vocabulary instruction refers to students learning vocabulary incidentally through wide reading and other independent means.

i+1: i+1 refers to new information that is slightly above a student's current level of understanding (Krashen, 1985).

Linguistic processes of the prism model: These processes involve the four modes of language (speaking, listening, reading, and writing) in relation to social and academic language proficiencies in the native and target languages (Thomas & Collier, 1997).

Meaningful use: Meaningful use describes the active involvement of students in vocabulary strategies to develop a greater understanding of the vocabulary words being learned. This does not include teacher discussion and lecture style instruction. Student engagement is a critical component of meaningful use.

Multiple exposures: Multiple exposures refers to students viewing and learning vocabulary words in a variety of contexts and through numerous encounters.

Native language: The native language is the first language acquired by an individual.

Permanent memory: Permanent memory contains all of a person's background and prior knowledge (Marzano, 2004). The goal of vocabulary learning is to have students store the meanings of vocabulary words in their permanent memory to be accessed, consciously or unconsciously, whenever needed (Stahl, 1999).

Prior knowledge: Prior knowledge is previously acquired non-academic knowledge that is related to life skills and personal experiences (Marzano, 2004).

Prism model: The prism model is a conceptual model that informs instruction specifically designed to meet the linguistic, academic, cognitive, and sociocultural needs of a student (Thomas & Collier, 1997).

Retention: Retention refers to the storage of vocabulary words and information in an individual's permanent memory.

Sensory memory: Sensory memory involves the temporary storage of information gained through a person's senses as he or she makes contact with the environment and information being introduced (Marzano, 2004).

Social and academic interactions: These interactions involve CLD students practicing social and academic English with their peers in whole-class, partner, or small-group settings.

Sociocultural processes of the prism model: The sociocultural processes are at the core of the prism model. Central to a student's acquisition of language are all the social and cultural processes that occur in daily life, including those of his or her past, present, and future. These processes take place in the contexts of home and community as well as school (Thomas & Collier, 1997).

Teacher scaffolding: Scaffolding is a means by which CLD students receive support in various forms from the teacher. As students make academic progress, the teacher carefully reduces the supports resulting in student independence (Echevarria, Vogt, & Short, 2000).

Wait time: Wait time is the amount of time that a teacher provides students for processing a question or developing a response before he or she calls on someone in the class to answer.

Working memory: Working memory is a temporary storage system for managing information needed for learning and comprehension (Marzano, 2004).

Summary

This study addresses the need for more quasi-experimental studies that focus on how to effectively provide vocabulary instruction for CLD students in grade-level classrooms. Vocabulary research findings indicate that the same strategies and instruction can be used for both native English speakers and CLD students. However, there are indications that grade-level teachers need to make some adaptations in their instruction in order to address the language, academic, cognitive, and sociocultural processes of CLD students. It is intended that grade-level teachers will be able to use the results of this study in order to more effectively teach the academic vocabulary necessary for CLD students' academic success. In addition, this research will contribute to the needed conversation at both the theoretical and practical level about the most effective way grade-level teachers can support the vocabulary development of CLD students and close the achievement gap between these students and their native-English-speaking peers.

Chapter Two establishes a foundation for this quasi-experimental study on vocabulary development for CLD students. This chapter presents a detailed review of pertinent literature on vocabulary instruction for both monolingual and second language learners. Based on this theory and research, a composite substantive theoretical framework, entitled the IBA Framework, was developed to integrate the characteristics of effective vocabulary instruction and the essential processes of second language acquisition.

Chapter 2 - REVIEW OF THE LITERATURE

The purpose of this chapter is to establish a theoretical foundation of the current research of effective vocabulary instruction for native-English-speaking and culturally and linguistically diverse (CLD) students. This review of the literature is divided into five primary sections followed by a chapter summary. The first section introduces the demographic shift in school populations and how the influx of CLD students has influenced the instruction of teachers in the mainstream classroom setting.

The second section examines the importance of vocabulary knowledge and effective vocabulary instruction for students' academic achievement in school. Among topics discussed are the following:

- Students' background and prior knowledge
- Functions of memory
- Current brain research
- The progression from known vocabulary words of students to new vocabulary being introduced in the classroom
- Indirect and direct vocabulary instruction
- The selection of vocabulary words

The third section of this chapter further establishes the foundation of effective vocabulary instruction through a discussion of meaningful use, multiple exposures, and higher-level word knowledge. The fourth section explores the linguistic, academic, cognitive, and sociocultural processes of the prism model and aspects of the teaching and learning process with CLD students (e.g., native language, social language, and academic English use, cognate awareness, social and academic interactions, grouping configurations, comprehensible input, teacher scaffolding, wait time, teacher dispositions, and classroom conditions).

The fifth section of the chapter explains the IBA Intervention. This intervention integrates effective vocabulary instruction and second language acquisition theory to help increase student engagement. The targeted vocabulary strategies are intended to lead to

higher retention of vocabulary, as demonstrated by CLD students' receptive and expressive knowledge in academic English.

Culturally and Linguistically Diverse Students

The continual increase of cultural and linguistic diversity in the United States is having a profound effect on today's school systems. Students for whom English is a second language constitutes the fastest growing school-age population in the nation, out of which approximately 55% of students are native born and 45% are foreign born (Lachat, 2004). The rapid growth of CLD populations in schools today reflects a national trend during the past two decades of increased cultural diversity that has changed the community composition across the country. Students who speak a language other than English in their homes live in all areas and regions of the United States. Children within and among classrooms in the same school and district can vary widely in background and language ability. Students of diverse backgrounds often differ from typical grade-level students in terms of their ethnicity, socioeconomic status, and native language (Au, 1993). The rapid growth of CLD students has had a significant impact on classroom instruction and society in general.

Given the tremendous influx during recent years of students whose first language is not English, there is a greater need for meaningful curriculum and instruction that is accessible to all students in classroom settings. All students come to school with background experiences, values, and knowledge unique to their cultural ethnicities. First year and veteran teachers alike often find themselves feeling overwhelmed and under-equipped to provide CLD students (whose backgrounds may be very different from those of the teachers) with necessary rich and authentic literacy instruction. Teachers are also responsible for improving their students' academic English language skills, while the students may speak different first languages and be at different stages of English language acquisition. This diversity brings exciting opportunities for a multicultural society, yet it is understandable that it can bring frustration to classroom teachers of students who are simultaneously learning a new language, a new culture, and new subject matter. As Bredekamp and Copple (1997) note:

Increasingly, programs serve children and families from diverse cultural and

> linguistic backgrounds, requiring that all programs demonstrate understanding of and responsiveness to cultural and linguistic diversity. Because culture and language are critical components of children's development, practices cannot be developmentally appropriate unless they are responsive to cultural and linguistic diversity" (p. 4).

For CLD students to succeed in the classroom and on standardized assessments, they must master vocabulary, grammar, and subject-specific uses of English. CLD students must make connections between their emerging English language skills and the content knowledge they are studying in order to achieve academic success on specific content tasks (Echevarria et al., 2006).

Not surprisingly, many CLD students struggle with reading in English. A student's reading ability is extensively connected to academic success, and CLD students generally perform significantly lower in reading compared to their monolingual English-speaking classmates (August, Calderon, & Carlo, 2000). The existence of an academic achievement gap between CLD students and native-English-speaking students is underscored by the National Assessment of Educational Progress (2002) reading results (Grigg, Daane, Jin, & Campbell, 2003). These results show that, as a group, students of diverse backgrounds have fallen four years behind their grade-level peers in reading achievement by the time they reach the 12th grade. Without sufficient understanding and appropriate usage of the English language and vocabulary, competition with native-English-speaking students is difficult for CLD students. According to Grant and Wong (2003), "As the population of language-minority students grows and higher levels of literacy are expected for all students, more must be done to help English learners achieve educational parity with native English speakers" (p. 386). Grant and Wong estimate that 30-40% of school-age CLD students will fail to reach acceptable levels of English reading by the end of their elementary schooling.

Children enter school with differences in vocabulary knowledge as a result of experiences and exposure to literacy and language activities (Hart & Risley, 1995). Before entering kindergarten, native English speakers typically know at least 5,000 to 7,000 English words. CLD students must not only close any initial vocabulary gap, but also keep pace with native English speakers as they steadily expand their vocabularies

(AERA, 2004). Research has found that students with limited vocabularies in third grade have declining reading comprehension scores in the later elementary years (Chall, Jacobs, & Baldwin, 1990). With this in mind, effective vocabulary instruction is critical for the academic achievement of CLD students. The following section explores vocabulary instruction for native English speakers and CLD students.

Vocabulary Development

Vocabulary instruction was identified by the National Reading Panel (NRP) (2000) as an essential element that students need to improve their reading achievement: "Reading comprehension is a cognitive process that integrates complex skills and cannot be understood without examining the critical role of vocabulary learning and instruction in its development" (p. 41). If students do not understand the meaning of the words in the written text, they will not be able to comprehend the passage. August and Hakuta (1997) found that "vocabulary is the primary determinant of reading comprehension" (p. 56). Vocabulary knowledge also is highly correlated with standardized achievement test scores and intelligence quotient (IQ) scores (Anderson & Nagy, 1992).

Even though research shows that vocabulary knowledge is strongly linked to academic success (Anderson & Nagy, 1992), educators are not sufficiently addressing students' vocabulary development in their classroom instruction. The mere act of students attending school has little effect on vocabulary growth (Biemiller & Boote, 2006). Durkin (1979) found that intermediate classroom teachers spent less than 1% of classroom instruction on vocabulary development. Later, Scott and Nagy (1997) supported the earlier research, finding only 6% of instructional time devoted to vocabulary instruction. In classrooms nationwide, teachers need to "address vocabulary instruction more deliberately" in their teaching (Brabham & Villaume, 2002, p. 264).

According to Marzano (1999), the lack of vocabulary instruction in classrooms might be a result of teacher misconceptions about what it means to teach vocabulary and its potential effect on students' academic success. Scott et al. (2003) found that there is a mismatch between the characteristics of effective vocabulary instruction noted in research and the kind of vocabulary instruction found in classrooms. Bromley (2007) states that "word learning is a complicated process. It requires giving students a variety of

opportunities to connect new words to related words, analyze word structure, understand multiple meanings, and use words actively in authentic ways" (p. 536). This type of vocabulary instruction is something that may not be a particular strength for classroom teachers and easily can be overlooked with all the other skill areas that need to be addressed throughout the day. Furthermore, teachers may need a different framework to support their vocabulary instruction in the classroom setting with CLD students.

Vocabulary knowledge is a critical factor in the academic success of CLD students (Proctor, Carlo, August, & Snow, 2005; Folse, 2004; Nation, 2001). Jimenez (1994) identified vocabulary as the "single most encountered obstacle" for CLD students on standardized assessments (p. 103). Saville-Troike (1984) found that for school-aged second language learners, vocabulary knowledge is the single best predictor of their academic achievement across subject matter domains.

Research indicates that vocabulary knowledge is one of the strongest factors influencing the discrepancy between the reading performance of native English speakers and that of CLD students. CLD students often have far less extensive English vocabularies than their native-English-speaking peers, despite the fact that many CLD students possess a large vocabulary in their native language (Garcia, 1994). Although students with strong native language skills can use these skills in reading English (Slavin & Cheung, 2003), English vocabulary is still a significant stumbling block for students in grade-level classrooms.

Activating students' background and prior knowledge is an important aspect of vocabulary instruction for native English speakers and CLD students. Many times, however, grade-level teachers do not spend instruction time on activating such knowledge when introducing new vocabulary words. The following section details the importance of activating a student's background and prior knowledge and the effects this can have on vocabulary development.

Activating Background and Prior Knowledge

For vocabulary instruction to be effective, students must relate new words to their background and prior knowledge (Nagy, 1998). In order to understand the importance of background and prior knowledge, these terms first must be clearly defined. Background

and prior knowledge are not equivalent in meaning. According to Marzano (2004), *background knowledge* is what a person already knows about a topic academically. *Prior knowledge* refers to previously acquired, non-academic knowledge. Prior knowledge is related to life skills and personal experiences. Kujawa and Huske (1995) state that prior knowledge can be explained as a combination of a person's previous attitudes and experiences. A student's background and prior knowledge is ever changing by facts, social customs, experiences, and emotions (Marzano, 2004) that are encountered and/or learned. Both background and prior knowledge play a significant role in a student's understanding of new vocabulary words being introduced as well as his or her retention of the words for later use.

Background and prior knowledge are also known as a person's schema. Schema, as defined by Pearson and Spiro (1982), are tiny pictures or associations that people make in their heads when they are reading a word or sentence. Lange (1981) compared schema to files or slots of existing information that can be packed with new information. According to Harris and Sipay (1990), "Schema theory attempts to explain how knowledge is represented in the mind and how these representations facilitate comprehension and learning" (p. 559). Schema are the background and prior knowledge students need to possess and be able to access in order to understand what vocabulary words mean in context. In other words, making connections to a student's schema increases his or her comprehension of new information (Swan, 2003).

Activating students' background and prior knowledge about vocabulary words involves teaching students to access the information they have stored in their permanent memory. Background and prior knowledge is what students use to develop, expand, and refine vocabulary word meanings in a specific content area (Rupley, Logan, & Nichols, 1999). Manning (1999) contends that it is imperative to activate a student's prior and background knowledge by examining the meaning of vocabulary words and clarifying misconceptions about the specific concepts.

Rupley, Logan, and Nichols (1999) suggest that a student's background knowledge can range from definitional and contextual to the more complex knowledge known as decontextualized knowledge. Definitional knowledge is the simplest form of vocabulary knowledge that does not assist students in gaining understanding from their

own background or prior knowledge. According to Rupley, Logan, and Nichols (1999) this type of knowledge is based on dictionaries and sight word lists. Contextual knowledge is a deeper level of understanding that enables students to gain information from context clues. Contextual knowledge "allows students to use prior vocabulary knowledge with unfamiliar words and concepts and conceptualize them into new word meaning or understanding" (Rupley, Logan, & Nichols, 1999, p. 337). The most complex level of understanding is decontextualized knowledge, which enables students to integrate unknown information with background and prior knowledge in order to automatically construct meaning of the new words. Making use of students' current levels of word knowledge is significant for successful vocabulary development.

Instruction that combines definitional and contextual information (Stahl, 1983), writing, and the rich manipulation of vocabulary words (Beck, McKeown, & McCaslin, 1983) is significantly more useful than definitional instruction alone. Vocabulary knowledge expands when students have numerous opportunities to encounter new words in rich and varying contexts. The key issue for extending students' background and prior knowledge is making specific connections between what the students already know and the new information. Without such connections to vocabulary words, the educational experiences will not make it into storage in students' permanent memory (Swinney & Velasco, 2006).

Sensory, Working, and Permanent Memory

Most scientists and brain researchers agree that a person's memory is a multifaceted, complex process that involves activating a large number of neural circuits in many sections of the brain in order to learn (Sprenger, 2002). How newly learned information becomes background knowledge depends on a person's ability to process and store information in his or her permanent memory and the frequency of the educational experiences. Marzano (2004) identified three different functions of memory—sensory, working, and permanent—to distinguish how information becomes part of a person's background knowledge.

Sensory memory deals with the temporary storage of information gained through a person's senses. However, a person cannot process all the information that is introduced

to his or her five senses. The information that gets kept and moved on into working memory depends on what the person is paying attention to and his or her level of interest (Anderson, 1995). Additionally, Wolfe (2001) states that the brain may attend to meaningless information for only a very short time in the sensory memory. The brain has not evolved to its present condition by taking in meaningless information. If students cannot make sense out of the new, incoming information, the brain will not process the information any further and the information will not to make it into the working memory. Information that is comprehensible and important or of interest to a person then moves into working memory.

Working memory has the ability to activate information from both the sensory and permanent memory. If students have sufficient meaningful and multiple exposures with the vocabulary while it is in working memory, the information will move to and reside in permanent memory. Marzano (2004) ascertains that permanent memory contains all of a person's previous knowledge, academic and non-academic. It is the location in the brain where everything that a person knows and understands is stored. How this information is stored and accessed by a student is called the cognitive process (Rosenshine, 1997).

For educators, the goal of vocabulary instruction is to have students store the meanings of vocabulary words in their permanent memory to be accessed, consciously or unconsciously, whenever needed (Stahl, 1999). This is accomplished by making connections between the students' background and prior knowledge and the content material. The more connections that are made to known information in the permanent memory, the easier the content is to retain and be accessed by the students.

When students develop a "conceptual hook" (Young & Hadaway, 2006) with the information in their permanent memory, they have access to all of the previous connections that already exist about that specific information (Svinicki, 1991). Students can activate their schema more readily because of the established routes in their memory bank. These established connections allow students to think more deeply about the meaning of the vocabulary words, which increases the students' metacognition. Metacognition is the term used to describe when people are conscious of their own thinking and reflection on information. When students are aware of their own thinking,

they can develop effective learning strategies that lead them to higher levels of independent word knowledge (Feuerstein, 1980).

The following section outlines some of the current brain research that has important implications for vocabulary instruction.

Brain Research

Connections are made within the brain as a result of students' experiences (Genesee, 2000). These connections are formed among the brain's neurons, and circuits start to develop. The connections begin to link with other neurons in other regions of the brain that are associated with visual, tactile, and auditory information related to vocabulary words. These established connections enable students to understand a word's meaning given the context in which the word is found.

Research by Gage et al. (1999) indicates that the brain exhibits an elastic quality, which allows it to be influenced and changed physically when students learn new information through meaningful use and exposures. The brain constantly seeks to establish connections between new, unknown information and existing, known information (Wolfe & Brandt, 1998). These connections increase the brain's dendrites, and this leads to a higher level of neural activity, which allows students to learn more and stimulate even more physical changes in their brains (Jensen, 1998; Kotulak, 1996).

Cromwell's (1989) research focused on how the brain processes and organizes newly learned information. The brain organizes this new information on the basis of previous experiences and resulting understanding. Then the brain constructs meaning by establishing patterns, emotions, and connections (Jensen, 1998), thus further developing a student's background and prior knowledge.

According to brain research, emotions can affect a student's attention level, which drives the student's learning of information (Wolfe, 2001). Sousa (2003) finds that endorphins (chemicals in the brain that are released in a non-threatening environment) are replaced by a chemical called cortisol when stress is present. Cortisol causes the brain to then shut down higher-level thinking and learning. On the other hand, when instruction is tied to positive emotional experience, it can increase students' motivation to learn and lead students to generate new ideas (Madrazo & Motz, 2005).

Brain research also confirms that educators must make instructional provisions for individual student differences in learning styles by providing alternative grouping configurations, instructional materials that are comprehensible and context-rich, and meaningful environments (Genesee, 2000). A student's unique learning style may not be simply a matter of the student's personal choice, but rather the hardwiring of the student's brain. Additionally, Wolfe and Brandt (1998) and Jensen (1998) all ascertain that the brain's priority is to survive and create understanding with new and previously learned information. The brain is an innately social and collaborative organ. Although brain processing takes place at the individual level, a student's learning is enhanced when the classroom environment provides opportunities to discuss thinking, share thoughts, and work collaboratively with peers (Wolfe & Brandt, 1998). This kind of environment is particularly important for CLD students. The following section focuses specifically on CLD students' background and prior knowledge.

CLD Students' Background and Prior Knowledge

Greenwood (2002) states that acquiring real word knowledge involves an active process of integrating new vocabulary words with ideas that exist in a person's background and prior knowledge. Activating background knowledge helps students draw on their personal experiences as a means to understanding new information. However, there can be significant differences in background knowledge among students.

Educators must be mindful that all CLD students have background and prior knowledge; however, some students may not have the academic knowledge of the English language necessary to be successful in an academic setting. Even in classrooms where all the students have similar backgrounds (e.g., culturally, linguistically, economically), the students do not have identical prior and background experiences to draw upon (Cappellini, 2005). Gibbons (2002) stressed that there are considerable differences between students within any particular cultural group. Kendall and Marzano (1995) state that there are many students who enter the educational setting having incidentally learned academic knowledge outside of school and who come to subject-area classrooms already understanding the content. The notion that background knowledge

exists at different levels is also strongly supported by research on vocabulary understanding (Graves, 1984; McKeown & Beck, 1988).

Furthermore, students' experiences may be very different culturally and linguistically, and this can lead to mismatches between teachers and students. Educators must be aware of these mismatches in background knowledge; otherwise, such circumstances can have a negative impact on students' learning opportunities and academic success (Nieto, 1999). Educators also must consider that the U.S. educational system is based on European American cultural norms and values (Gay, 2000), which can be very different from those of CLD students. Moll, Amanti, Neff, and Gonzalez (1992) refer to the knowledge that CLD students bring with them to school as their *funds of knowledge*. This knowledge is often related to family, home, religion, and the workplace. These sources of knowledge are usually untapped resources in the classroom or subject area. CLD students come to school with a wealth of knowledge and experiences, but their background and prior knowledge may differ from that of other students in the classroom (Rea & Mercuri, 2006), for whom curriculum and instruction traditionally have been designed. Brock and Raphael (2005) stress the importance of teachers needing to support students' learning using different educational contexts and interaction patterns. When educators learn about their CLD students' background knowledge, they can integrate it into classroom reading and other academic tasks.

Activating students' background knowledge and making learning relevant through genuine experiences are effective strategies for all students. However, they are imperative when students' cultures differ from the culture of the grade-level classroom setting. CLD students' background knowledge is the underlying force in second language acquisition (Swinney & Velasco, 2006) and a motivating factor in their learning vocabulary and academic English. The prior experiences and knowledge CLD students bring with them to the classroom can be capitalized on and used to help them learn English (Chamot & O'Malley, 1994). Teachers can guide CLD students to activate their existing background knowledge about vocabulary by having them brainstorm about what they already know about a word. When they develop these connections, students feel personally connected to the vocabulary and have an increased chance for developing ownership of the new vocabulary (Blachowicz & Fisher, 2000).

Brock and Raphael (2005) found that teachers who successfully teach students whose backgrounds differ from their own have several characteristics in common. For example, such educators understand that good teaching is not transcendent. Rather, "good teaching is a contextual and situational process" (p. 5). This process takes into account students' prior experiences, community settings, cultural backgrounds, and ethnic identities (Gay, 2000). Additionally, effective educators understand that each student has a personal history and cultural background that shapes his or her individual viewpoints.

When teachers tap into students' native languages and cultural educational experiences, they give students a sense of belonging (Wong Fillmore, 2000). Even if a grade-level classroom teacher does not speak the languages of CLD students in the classroom, he or she can facilitate students' participation and comfort level by accepting use of their native language. In addition, educators can establish a classroom environment of respect where CLD students feel free to share their knowledge about the topic as they participate in classroom discussions. Teachers can also encourage CLD students' attempts to pronounce English vocabulary words and demonstrate genuine sensitivity with regard to facial expressions and other nonverbal communication about CLD students' learning of the new vocabulary (Fay & Whaley, 2004).

As previously stated, educators may need to build up CLD students' background and prior knowledge related to certain topics by providing a variety of academically enriching and meaningful experiences. These experiences can be provided through either indirect or direct vocabulary instruction, both of which are used to enhance students' vocabulary development.

Indirect and Direct Vocabulary Instruction

According to the National Reading Panel (2000), indirect (incidental) and direct (explicit) vocabulary instruction are two ways to teach vocabulary. Students can acquire indirect vocabulary knowledge through instructional conversations, read alouds, and independent reading (Armbruster, Lehr, & Osborn, 2001). When classroom teachers talk with students about new vocabulary concepts, this interactive dialogue helps the students relate and connect the vocabulary words to their background knowledge and prior experiences (National Institute for Literacy, 2001). With indirect vocabulary instruction,

students also are encouraged to read a wide variety of different texts and genres independently (Vaughn & Linan-Thompson, 2004). Indirect vocabulary learning accounts for a vast volume of the vocabulary knowledge students gain in the classroom (Beck & McKeown, 1991). However, as Stahl and Kapinus (2001) note, "some words are not likely be become part of one's vocabulary without direct instruction. In addition, effective vocabulary instruction may help students understand what they must do and know in order to learn new words on their own" (p. 13). For struggling readers with low comprehension, gaining the desired vocabulary knowledge through independent reading is especially unlikely. Moreover, indirect vocabulary instruction is not sufficient for students who are learning English as a second language.

CLD students may have a limited reading vocabulary in English and little exposure to academic English outside of the classroom; yet these are necessary experiences for indirect vocabulary growth. Without sufficient word knowledge, there is little chance that CLD students will be able to comprehend what they read in a given text. Research shows that second language learners who have weak English language vocabularies tend to be word-by-word readers who have difficulty with unknown words (Johnson & Steele, 1996). If CLD students do not recognize words automatically, they often spend too much time trying to figure out the meaning of the words. Because CLD students are often occupied with going back and forth in the text looking for context clues to help create understanding, they frequently lack comprehension of the reading (Calderon et al., 2003). Educators cannot assume that CLD students' vocabulary is being appropriately developed when only indirect vocabulary instruction is used (Nation & Meara, 2002).

Direct instruction is more effective than indirect vocabulary instruction for students' learning of vocabulary that is critical to their comprehension of the text (passage-critical words) (McKeown & Beck, 1988; Snow, Burns & Griffin, 1998). According to Armbruster, Lehr, & Osborn (2001), "Direct instruction helps students learn difficult words, such as words that represent complex concepts that are not part of the students' everyday experiences" (p. 36). This direct instruction of vocabulary meanings can make a significant difference in a student's overall vocabulary development (Beck, McKeown & Kucan, 2002). Marzano (2004) notes that direct vocabulary instruction has

a remarkable record of improving students' background knowledge and understanding of academic content material. Direct instruction helps CLD students create the mental scaffolds needed to support their learning of vocabulary words and concepts (Reutzel & Cooter, 2003). Direct instruction of vocabulary allows educators to help *all* students, whether they have large or small vocabularies, learn new vocabulary words in meaningful and engaging ways (Beck et al., 2002).

Direct vocabulary instruction not only involves teaching specific vocabulary words, however, it also equips students with learning strategies necessary to expand their vocabulary knowledge. For example, by helping students connect new, unknown words to their background knowledge, some strategies promote students' abilities to predict as well as self-assess their understandings of the new words. Unfortunately, in classroom observation studies there is evidence that educators spend little time in direct vocabulary instruction (Scott, Jamieson-Noel, & Asselin, 2003).

When teachers use direct instruction to teach vocabulary, they need to be systematic and thoughtful in selecting the critical vocabulary words they teach to students. The following section explores research on selecting vocabulary words.

Selecting Vocabulary Words

Students need to learn an enormous number of vocabulary words, and it is impossible to teach all of these words directly. However, not all words need the same attention. Vocabulary instruction should focus on important words (key words that help readers make sense of the text), useful words (words students will encounter often), and difficult words (words with multiple meanings, words that are part of idiomatic expressions, and so forth). Researchers have established guidelines to help educators choose vocabulary words for instruction.

Beck, Mckeown, and Kucan (2002) recommend choosing vocabulary words by determining their usefulness, frequency, and ease with which a student can restate the meaning in their own words. The researchers distinguish between three different tiers of vocabulary words. Tier one words are basic vocabulary words, such as *cat*, *dog*, *clock*, and *jump*, which are frequently heard in social conversation and seen in numerous

contexts. These are words that rarely need direct vocabulary instruction in the school setting.

Tier two words represent a more sophisticated vocabulary. These are words, such as *consistent* and *assume*, that mature language users use in conversation and that are seen frequently in written text and standardized assessments. Tier two words also are frequently encountered in multiple content areas. Beck, Mckeown, and Kucan feel that teachers need to target their direct vocabulary instruction on tier two vocabulary words because of the impact these words have on reading comprehension and because of their prevalence throughout a student's schooling. Tier three words are content-specific words that appear in isolated situations and rarely are used in daily conversations. Science and mathematics terms are all examples of tier three words.

Selecting vocabulary words for CLD students can look differently than it does for native English speakers. Kinsella (2005) states that because vocabulary knowledge plays such a pivotal role in the overall school success and mobility of CLD students, all grade-level teachers must devote more time and attention to selecting vocabulary words. Then teachers must explicitly teach the selected vocabulary that will enable CLD students to meet the demands of today's standards-based curricula. Calderon et al. (2003) modified Beck's three-tiered system for vocabulary instruction when working CLD students. According to Calderon and colleagues, tier one words for second language learners are vocabulary words that are typically known concepts in the students' native language. The students may simply need the correct English label to make the connection to their background knowledge. Teachers can also make connections with cognates in the students' native language.

Tier two words for CLD students include many words with multiple meanings. Multiple meaning words can be very difficult for second language learners (August et al., 2005). Unless CLD students are taught a word's multiple meanings, their limited background knowledge of a word might lead them further away from an accurate understanding of the vocabulary word. Because tier three words are, by definition, low-frequency words, these terms usually can be translated to CLD students in their native language.

The next section of the chapter addresses components of effective vocabulary instruction that are also essential for second language acquisition. These components include: meaningful use, multiple exposures, and higher-level word knowledge.

Vocabulary Instruction and Second Language Acquisition

Special considerations need to be made when developing CLD students' vocabulary within the grade-level classroom setting. Arguelles (2005) acknowledges that there are significant double demands placed on CLD students who are simultaneously learning specific content-area vocabulary and the English language. Grade-level teachers need to address three aspects of instruction—meaningful use, multiple exposures, and higher-level word knowledge—to help ease the academic demand on CLD students so they can more effectively learn new vocabulary. The following section details how meaningful use looks for CLD students.

Meaningful Use

Learning vocabulary entails elaboration and discussion of word meaning and multiple opportunities to practice using the words in a variety of contexts (Beck & McKeown, 1991; Stahl & Fairbanks, 1986). Meaningful use does not mean that educators use classroom discussion as their sole means of teaching vocabulary (Bromley, 2002). Rather, research studies indicate that students retain the most information when engaged with vocabulary during meaningful use, such as when collaborating with peers. Group discussions and related vocabulary activities that both support students' integration of new words/concepts and make connections to the students' past experiences help to expand students' vocabularies in a meaningful manner (Rupley, Logan & Nichols, 1999). However, Madrazo and Motz (2005) found that teacher lecture continues to be the most widely used instructional method in the classroom.

CLD students learn English more readily if they are willing to take risks by engaging in conversation with their peers in English. A non-threatening, language-rich classroom is conducive to such dialogue. Components of an appropriate language-rich environment for students include conversation, acceptance, experience, and literature (Gestwicki, 1999). There are many opportunities for meaningful language and vocabulary use throughout the instructional day via both vocabulary strategies and CLD students'

interaction with their peers. However, mere exposure to vocabulary activities in English is not sufficient to ensure the development of academic language proficiency among CLD students (Doughty & Williams, 1998). A major factor of meaningful use is student engagement. Without high levels of engagement, CLD students are passive, with slim chances of making the vocabulary part of their permanent memory.

In order to ensure students are actively engaged in the classroom, the National Reading Panel (2001) has suggested that teachers eliminate the traditional style of teaching vocabulary in which the teacher asks a question and then calls on one student to answer. This traditional style of vocabulary instruction develops only superficial understandings of the words, and students quickly forget these understandings (Miller & Gildea, 1987).

Lenski et al. (2003) describe active engagement as "involving students in class discussions that incorporate new vocabulary and providing opportunities for students to apply the new acquired vocabulary to different situations" (p. 46). The researchers assert that when students are actively engaged, they are "being helped to become independent learners" (p. 46). Taking this into consideration, the working definition of engagement in this study is: "the active process where CLD students are engaged in and accountable for academic learning through vocabulary strategies that access background and prior knowledge through meaningful interactions that build upon and extend the students' English language skills and target vocabulary knowledge."

Engaged students continually build on their previous background knowledge and extend it by learning new information and vocabulary words (Swan, 2003). Engagement activities might include saying the word, writing it on the board, asking students to say it and write it, defining terms with pictures, and using visuals and realia, multi-sensory experiences, examples, and demonstrations (Echevarria et al., 2004). Richek (2005) found that active student engagement not only enhances the learning experience but also gets students excited about the vocabulary words, which leads to word consciousness. Student engagement ensures mental processing in learning and builds high interest in future vocabulary study (Scott & Nagy, 1997).

For vocabulary instruction to have a lasting impact, CLD students must become actively engaged so that generative thinking can occur (Reutzel & Cooter, 2003).

Generative thinking is an active, creative construction of a familiar concept or object. Educators should have students continually involved in vocabulary strategies that require generative thinking about words. Vocabulary instruction that supports the active engagement of CLD students in making connections between and among words (Blachowicz & Fisher, 2000) helps develop students' generative thinking skills.

In addition, active engagement in word learning improves retention of vocabulary and helps CLD students develop confidence with using the newly learned vocabulary in the original context as well as other situations. The following section elaborates on the second component of effective vocabulary instruction, which is multiple exposures of the vocabulary in a variety of contexts. Multiple exposures are important for CLD students to build a broader context for vocabulary word meanings.

Multiple Exposures in a Variety of Contexts Over Time

Effective vocabulary instruction provides multiple exposures to meaningful information about a word through rich and varied activities (Stahl & Kapinus, 2001; Vaughn & Linan-Thompson, 2004). One of the strongest findings regarding vocabulary instruction is that multiple exposures are required before a word becomes known. If the word is to be useful to a student's understanding, the word must be part of the student's permanent memory (Beck, McKeown, & Kucan, 2002).

For students to integrate new, unknown vocabulary words into their vocabulary repertoire, they must continue to use the words after initial instruction (Beck et al., 1983; Nation, 2006). The research varies on how many meaningful exposures it takes before a vocabulary word becomes part of a student's permanent memory. Hunt and Bulger (2005) reported that a word that is encountered only once in context has about a 10% chance of being learned by the student. Billmeyer (2001) suggests that students must have 6-14 meaningful interactions with a word before they are capable of using it independently. Beck et al. (2002) state that 12 encounters are sufficient to improve proficiency on a range of word knowledge.

The more exposures CLD students have to a word, the more likely it is that they will be able to comprehend, remember, and define it. Through meaningful and multiple exposures, the vocabulary words stay active in a student's working memory (Marzano,

2004). The student's interactions with the vocabulary need to incorporate meaningful engagement so that the student's experiences with the vocabulary words become part of his or her permanent memory.

Marzano's (2004) notion of memory trace suggests that the more times information is engaged in working memory, the stronger the connections to permanent memory. However, the multiple exposures cannot be just through repetition of the vocabulary. Vocabulary meanings are learned because of meaning associations rather than just repetition (Stahl & Fairbanks, 1986). The multiple exposures must consist of students making connections to background and prior knowledge, engaging in interactive discussions, drawing attention to vocabulary, and manipulating and analyzing word meanings (Carlo et al., 2004). Hamilton and Ghatala (1994) recommend that techniques such as having students elaborate on words by summarizing, drawing pictures, and eliciting examples from other students are effective methods of multiple exposures that need to be incorporated into vocabulary instruction.

Marzano (2004) suggests that vocabulary instruction is most effective when it targets academic terms that students will encounter throughout their reading materials. When CLD students see a word in multiple contexts, they gather more and more information about it until they are able to make connections about what the vocabulary word means. CLD students learn vocabulary words effectively when they are provided vocabulary instruction over an extended period of time and when that instruction has them actively engaged with the words. Since CLD students are learning the English language and academic content, multiple exposures give students time and opportunities to make connections to previously learned information and the new vocabulary. Moreover, multiple exposures of vocabulary allow CLD students to be exposed to a variety of linguistic experiences involving listening, speaking, reading, and writing, which both deepens students' understanding of English and expands their vocabulary knowledge (Kinsella, 2005).

Effective vocabulary instruction that incorporates multiple exposures leads to a higher-level of word knowledge for students. The following section elaborates on the research surrounding higher-level word knowledge for CLD students.

Higher-Level Word Knowledge

Students typically are provided with only a surface-level understanding of vocabulary words. However, when students are exposed to vocabulary in multiple contexts, they are able to get beyond the *acquainted level* of word knowledge to the *established level* (Beck et al., 1979; Graves & Prenn, 1986). A word at the *unknown level* is unfamiliar and new vocabulary. A word at the *acquainted level* is recognizable to the student; however, the student does not fully understand the meaning of the word. Students need multiple exposures with the acquainted word to reach the final level of word knowledge. A vocabulary word is fully understood and easily recognizable to the student at the *established level*. Given the multiple demands on teachers' instructional time, it is imperative to focus on words CLD students are unlikely to learn on their own through various exposures to English oral discourse (August et al., 2005).

As they make connections between prior and background knowledge and the information they are currently studying, CLD students use higher-order thinking to determine where concepts fit in the larger picture. This helps students develop a deeper, more thorough understanding of the concepts they encounter in their schoolwork (Rea & Mercuri, 2006). The more students use new vocabulary words and see them in different contexts, the more likely they are to use the vocabulary words at a higher level. By providing multiple exposures of words, teachers enable students to build a depth (rather than just breadth) of vocabulary knowledge (Gersten & Baker, 2000). A higher level of vocabulary knowledge allows for vast language development and better comprehension of words, which lead to students' ownership of the words (Beck, Perfetti, & McKeown, 1982).

When working with CLD students to develop their English language skills and enhance their English vocabularies, teachers need to be ever mindful of the multitude of ways a student's background and prior knowledge, as well as current linguistic, academic, cognitive, and sociocultural processes, can influence their learning. For example, Kinsella (2005) points out that CLD students' "lack of vocabulary knowledge impacts their understanding of the information. Unlike native English speaking students who can effectively use context clues, structural analysis, or appositional phrases to figure out unknown words, English learners do not have the background knowledge in

English to benefit from using these strategies" (p. 1). Therefore, it is imperative that grade-level teachers look to second language acquisition research, theory, and strategies as they develop ways to help CLD students learn vocabulary. The following section explores the various processes that educators must understand in order to successfully guide CLD students to reach their true academic potential.

The Prism Model

CLD students should be exposed to content that is cognitively demanding, yet in an atmosphere that is linguistically and socially supportive. When teachers know their students' educational backgrounds, language proficiencies, and developmental academic abilities, they are able to design appropriate instruction. As noted by Bear et al. (1996):

> Teachers who take the time to get to know their students and make connections to their culture, welcome the child into a safe learning environment. Because language is concept-based, children of diverse cultures may have different conceptual foundations. Teachers must be sensitive to ethnic and cultural diversity in the classroom. They cannot expect children to learn words that label notions unconnected to their experience. (p. 103)

Second language researchers Thomas and Collier (1997) developed a conceptual model for the interrelated processes that affect CLD students. The prism model has four interdependent and complex components: sociocultural, linguistic, academic, and cognitive processes. These four types of processes influence first and second language acquisition in a school context and academic success. The ongoing development of the four processes occurs simultaneously and often at the subconscious level. In short, the prism model presents a comprehensive way to understand the various assets and challenges CLD students bring to the classroom.

Second language theorist Wong Fillmore (1991) contends that three motivational components contribute to the effective learning of CLD students: (1) interest from the CLD students, (2) proficient native English speakers who support and interact with CLD students, and (3) a social setting that supports relationships between CLD students and proficient English speakers. These three motivational components coincide with Thomas and Collier's (1997) prism model.

Linguistic Processes of the Prism Model

Thomas and Collier (1997) explain that in the area of language development, the four modes of language (listening, speaking, reading, and writing) should all be targeted in each instructional lesson. Educators need to know how to involve each area in their vocabulary instruction. According to Wong Fillmore (1991), the linguistic processes influence how CLD students and native English speakers use and interpret the language used. Second language theorist Krashen (1994) states that the assumptions that native English speakers make about language affect the way comprehensible language is used when communicating with CLD students. Similarly, the linguistic expectations of CLD students influence how they interpret the language and vocabulary to be learned (Wong Fillmore, 1991). Girard and Spycher (2007) identified three unique types of specialized language used by CLD students: native language, social language, and academic English. These types of specialized language are integral to the linguistic processes of the prism model.

Native Language

The native language is also known as the student's home, primary, first, L1, or heritage language. A student's native language proficiency is a strong predictor of his or her English language development (Snow, Burns, & Griffin, 1998). Some CLD students were educated in their native language in their homeland and have a rich conceptual knowledge base that can be accessed. By allowing CLD students to access and transfer their conceptual and linguistic knowledge in the native language to their learning of English vocabulary, these students are able to more easily transition to learning the second language (Snow, 1990). A student's first language literacy skills have a positive effect on his or her development of second language literacy (Cummins, 2001; Krashen, 2003). Allowing CLD students to activate their background knowledge and relate to experiences in their primary language helps them become successful speakers and readers of English.

There are also CLD students who do not have the literacy skills to read and write in their native language. These CLD students must learn to read and write while they are learning both their new language and content-area material. Cummins (2001), Gibbons

(2002), and Ovando et al. (2006) argue that the CLD students whose first experience with learning to read occurs in their second language particularly need teacher scaffolds to provide them with access to learning. In addition, educators of these students must be willing to make earnest attempts to build on the students' current linguistic knowledge and abilities. As Gay (2000) argues, "Effective communication is simultaneously a goal, a method, and the essence of quality classroom instruction" (p. xv). Communication with others—especially others who do not share common cultural and linguistic backgrounds—can be enhanced when we "seek first to understand, then to be understood" (Convey, 1989, p. x). Seeking to understand others requires "empathic listening." It involves "listening with your eyes and heart. You listen for feelings, for meaning. You listen for behavior…you sense, you intuit, you feel" (Convey, 1989, p. 241). By knowing and working from students' current linguistic abilities, teachers have an entry point into conversations with students about vocabulary and concepts.

Social Language

The second specialized language identified by Girard and Spycher (2007) is social language. Social language is also known as basic interpersonal communication skills (BICS). Cummins (2001) states that BICS represents the language ability needed for casual conversation in everyday situations and circumstances. This type of language applies to the interpersonal conversations of CLD students with peers in formal and informal settings. On the other end of the spectrum is cognitive academic language proficiency (CALP). CALP is the language ability needed for learning academic skills and concepts. This more abstract use of language is required to be successful in academic settings and on standardized assessments.

According to Cummins (2001), it takes five to nine years for a student to become proficient in the English language. CLD students might sound fluent in English within one or two years, as they can converse socially with others. However, it takes much longer for CLD students to reach a level of academic fluency that is on the same level as their native-English-speaking peers. Unfortunately, many educators are unaware of the distinction between BICS and CALP and, therefore, often erroneously attribute greater levels of English comprehension to students who demonstrate proficiency in the social language.

According to Mohr (2004), the teacher becomes the medium for sharing conceptual information and scaffolding both the social and academic language for CLD students. Cummins' (2001) research findings on BICS and CALP language proficiencies are strongly supported by other second language researchers and theorists, such as Thomas and Collier (2002) and Snow and Wong-Fillmore (2000).

Academic English

The third specialized language is academic English. For the purpose of this study, academic English is defined as the vocabulary words and academic language that teachers focus on during content-area instruction, such as the language of texts, academic discussions, and formal writing. The vocabulary of academic English goes well beyond that used in most social conversations of students. CLD students need to be able to use English not only for daily conversation but also for academic learning and, ultimately, for negotiating their purpose in the broader society (Gibbons, 2002).

Academic English is decontextualized. Decontextualized language is more difficult to understand and much more cognitively demanding for students (Rhea & Mercuri, 2006). Academic English requires students to use linguistic skills to access higher-order thinking. According to Rea and Mercuri (2006), "academic English language asks students to interpret, infer, and synthesize information; to pick out the main idea; to relate ideas and information to their background experiences; to recognize the conventions of different genres; and to recognize text structure" (p. 78). As all students progress through the grade levels, they are asked to use more academic English in increasingly more difficult and demanding ways (Rea & Mercuri, 2006).

Freeman and Freeman (1994) explain that with academic English, CLD students encounter two types of vocabulary: general and content-specific. General academic vocabulary includes the academic terms, such as *label* and *furthermore*, that appear across multiple disciplines. Content-specific vocabulary comprises the vocabulary specific to a given discipline and includes words such as *plot* and *photosynthesis*. Content-specific vocabulary needs to be explicitly taught to all students. These academic English vocabulary terms and their specialized meanings often pose the greatest challenges for second language learners (Graves, 2006).

The amount of contextual support that the text or the teacher provides influences whether CLD students are able to understand or express the meaning of the content and vocabulary. This contextual support can come in the form of pictures, figures, and other information that aids students' understanding of the content-area material. The more that instruction is contextualized, the better the chance that both native-English-speaking students and CLD students will develop understanding of complex concepts and the language used to explain them (Bredekamp & Copple, 1997; Cummins, 1984).

Although academic English is imperative for students' linguistic growth and access to challenging curricula, academic English is not a natural language (Kinsella, 2005). The language needs to be explicitly taught in classrooms to raise student achievement. Wong-Fillmore (2002) asserts that academic English needs to be taught in the context of content instruction. Academic language, when used in vocabulary strategies, must be identified and students must be given multiple opportunities to learn and use these words in the context of meaningful academic experiences. Furthermore, Mohr (2004) acknowledges the fact that educators should not just assume that because CLD students are able to understand academic English, they also are able to produce it. Rather, educators must provide avenues for students' academic English production (writing, reading aloud, and academic talk) (Brooks, 2006).

Academic Processes of the Prism Model

Key to academic processes in each content area are specific vocabulary and content, which become more difficult with every succeeding grade level. However, because background knowledge transfers from the first language to the second language, it is beneficial to continue supporting students' academic development in their first language (Thomas & Collier, 1997). Effective instructional practices include: cognate instruction, social and academic interactions, and purposeful grouping configurations.

Cognate Awareness

Educators can connect, wherever possible, the new information to the known language of CLD students. Many English words have cognates in several different languages, such as French, German, Italian, Portuguese, and Spanish. Cognates are words that have similar phonetic spellings in English and in the learner's native language and

that are related in meaning. Cognates are a rich source of content information for some second language learners, especially those students whose first language is Spanish (August et al., 2006).

CLD students need to be encouraged and directed to make such connections between their first language and English. Directly teaching the use of cognates can improve vocabulary development for CLD students (McLaughlin et al., 2000). There is an extensive amount of research on the success of using cognates to develop the vocabularies of native Spanish speakers learning English. Cognates allow students to more easily transfer conceptual information from one language to another. This transfer of knowledge is known as the common underlying proficiency (CUP) theory. Second language acquisition theorist Cummins (2001) explains that concepts are not stored according to a particular language, but according to the concepts themselves. Therefore, conceptual knowledge serves as a foundation upon with skills and understanding are built and shared between two languages. As a result, students do not have to learn a concept more than once, but rather just the new label for the concept in English. CLD students who enter the grade-level classroom as capable and critical readers in their first language will transfer those skills and knowledge to reading in English. They are able to successfully make the transition to learning in English with sufficient instruction in vocabulary and the structure of the language (Valdes, 2001).

Social and Academic Interactions

Research on classroom interactions shows how little interaction actually occurs (Nystrand, 1997). August and Shanahan (2006) found that only 4% of the CLD student's day is spent engaging in informal English "student talk." Additionally, only 2% of the CLD student's day is spent engaging in English "academic talk." There is a desperate need to increase students' engagement in the academic English language in linguistically diverse classrooms.

In a study conducted by Mohr (2004), it was observed that "teachers missed many opportunities to help CLD students communicate in class, allowing them to be less involved in oral interactions" (p. 440). If the teacher is the only person in the classroom speaking and discussing vocabulary, students are missing the social and academic interactions needed for active engagement and retention of vocabulary meanings.

Educators need to reduce the amount of their individual teacher talk so that CLD students have more opportunities to engage with the vocabulary they are learning. As Hoyt (2002) notes, "Teacher talk is important. It is an opportunity to open windows into the world of literacy through carefully crafted, explicit instruction. But the teacher's voice needs to be frequently punctuated with the voices of the students" (p. 27).

In learning a second language, CLD students gain oral fluency and confidence when they engage in interactive dialogue in small group settings (Echevarria, Vogt, & Short, 2004). Snow and Wong-Fillmore (2000) and Mohr (2004) all emphasize the need for increased talk time for CLD students with their native-English-speaking counterparts. Such interactive language opportunities offer multiple benefits for CLD students such as: (a) models of usage, pronunciation, and intonation and (b) sources of direct feedback regarding the success of the communication.

Students need to use the academic language as a means toward understanding the meaning of vocabulary words. As CLD students are interacting with other students in pairs, in groups, or as a whole class, they are practicing speaking social and academic English. The academic success of CLD students frequently depends on the number and quality of vocabulary strategies that guide all students to interact and cooperatively work together (DeVillar & Faltis, 1991). Roit (2006) stresses that the ideal setting for CLD students prompts students not only to derive meaning from text but also to learn how to discuss the vocabulary related to what they are learning. The teacher can add to students' learning through direct questioning and discussion, which enable students to elaborate on their responses and thereby further develop their academic language skills. In addition, by tapping into CLD students' prior and background knowledge with a discussion about the vocabulary, teachers establish an atmosphere where students are encouraged to start thinking and talking about vocabulary word meanings.

It is important to include all students, regardless of their language or reading levels, in classroom discussions because students from diverse backgrounds have unique points of view that can enliven and enrich any discussion (Cappellini, 2005). In planning these interactions, teachers must consider purposeful grouping configurations can be used to further enhance student learning.

Grouping Configurations

When providing opportunities for students to participate and become actively engaged in the learning process, educators can use whole-group teaching, large and small-group instruction, pair activities, and individual work (Echevarria, Vogt, & Short, 2004). However, during whole-group instruction students might have one or no opportunities to respond to teacher comments or questions, which lowers the students' engagement level. According to Rea and Mercuri (2006), "Research has shown that students who consistently work in groups make better gains in academic learning and higher-order thinking than students who are taught via traditional whole-class lectures" (p. 3). Brock and Raphael's (2005) research found that the most significant difference between small-group activities and whole-group lessons was the level of student engagement in the classroom. They found that in the small-group context, there were highly engaged active learners. However, when that same group of students was in the whole-group situation, the engagement level decreased. The whole-group setting did not achieve the deep engagement of learners that the teachers wanted for their students.

Waxman and Tellez (2002) found that when educators rely mostly on whole-class instruction, the instruction generally leads to lower achievement and motivation for CLD students. To encourage CLD students to produce academic language, educators need to establish more small-group and one-to-one instructional grouping configurations (Brooks, 2006). Through a variety of grouping configurations, CLD students are encouraged to think, develop social relationships, and expand their use of both social and academic language. Cooperative learning groups are especially helpful for creating classroom cultures that support students' thinking, vocabulary strategy use, connections to background knowledge, and engagement with text and vocabulary words (Swan, 2003).

As students work in cooperative learning groups, social barriers are broken down between students with different cultural and linguistic backgrounds. Brandt (1990) found that classrooms with students of different ethnic backgrounds have an increase in positive personal dialogue among students as a result of their working in cooperative groups. In these groups, every student has the responsibility to be engaged, to think, and to apply his or her learning in a structured setting. Furthermore, Brock and Raphael (2005) found that

students who were in mixed-language groups were able to tap into their background knowledge in their own language to discover and share cognates of the vocabulary words.

Students can be grouped together homogeneously by their language proficiency or academic ability, or groups can consist of students at varying levels of language and academic ability (Irujo, 2005). When grouping CLD students, educators need to consider CLD students' language proficiency levels and content-area knowledge in order to form groups that will best facilitate the learning of vocabulary for all students (Irujo, 2005). Wong Fillmore (1991) states that the social skills of second language learners, as well as native English speakers, also influence academic settings. For reasons such as these, educators must be open to investigate the backgrounds and needs of CLD students in their classrooms (Brock & Raphael, 2005). Educators can make their grouping configurations effective by taking into account individual CLD student biographies (Herrera & Murry, 2005).

Cognitive Processes of the Prism Model

Cognitive development or the natural, subconscious process that occurs developmentally from birth through schooling and beyond (Ovando et al., 2006). Cognitive processes "involve the analytic procedures and operations that take place in the heads of learners and ultimately result in the acquisition of that language" (Wong Fillmore, 1991, p. 56). According to Thomas and Collier (1997), the most overlooked component of the prism model is cognitive development. It is overlooked because many times educators feel that because of the English language proficiency levels of CLD students, these students cannot handle the academic rigor of the content areas. Research has shown that in comparison to their grade-level peers, CLD students tend to receive a great deal of instruction in lower-level skills and little reading instruction that leads to more in-depth thinking about text (Darling-Hammond, 1997). Waxman and Tellez (2002) found that inappropriate expectations for CLD students on the part of grade-level classroom teachers lead to the persistent underachievement of CLD students. If educators tailor their instruction while at the same time maintaining the required high academic standards, all CLD students can be expected to succeed academically (Krashen, 1994).

Comprehensible input, teacher scaffolding, and wait time are each essential to meaningful vocabulary instruction that engages CLD students and prompts them to cognitively stretch their higher-order thinking skills. Ensuring that CLD students have comprehensible input is a pivotal second language acquisition strategy.

Comprehensible Input

Most researchers are in agreement that students learn a language through comprehensible input that they can connect to their background and prior knowledge (Northeast and Islands Regional Educational Laboratory, 2002). Comprehensible input is the result of any technique that makes information understandable to a person. CLD students' understanding and learning are supported when the materials or lesson is context-embedded. Comprehensible input is an important ingredient for second language acquisition (Krashen, 1982). It comes in the form of modeling, visuals, hands-on activities, real objects, gestures, body language, and so forth. When proving comprehensible input, educators take into account students' language proficiency levels by making both oral and written messages understandable (Echevarria, Vogt, & Short, 2000; Krashen, 1985).

According to Krashen (1985), language acquisition occurs when comprehensible input passes through a student's affective filter and moves into his or her subconscious, becoming knowledge. Moreover, Krashen's (1985) Input Hypothesis states that teachers should provide input that is a step beyond the student's current level of competence or language (i+1). This idea of instructional input being just beyond the student's current level is very similar to Vygotsky's (1978) zone of proximal development (ZPD). It is essential that educators establish an environment where students are provided comprehensible input at their "i+1" level. As Krashen (1994) explains, "All other factors thought to encourage or cause second language acquisition only work when they are related to comprehensible input" (p. 58). The comprehensible instruction also helps students effectively learn new vocabulary knowledge (Ortiz, 2001).

Teacher scaffolding is another critical aspect of instruction that enables CLD students to understand the vocabulary that is being introduced and targeted throughout the lesson. The following section explores the use of teacher scaffolds in the classroom.

Teacher Scaffolding

Scaffolding is a means by which CLD students receive support in various forms from the teacher. As students make academic progress, the teacher carefully reduces the supports resulting in student independence (Echevarria, Vogt, & Short, 2000). According to Santamaria, Fletcher, and Bos (2002), educational scaffolds are fluid, dynamic, and interactive. The scaffolds can be used temporarily to assist second language learners as they develop vocabulary knowledge, strategies, and skills in the classroom. Padak (2006) notes that the primary difference between native English speakers and CLD students is that second language learners generally need more distinctive scaffolding to understand vocabulary. Vocabulary instruction should be explicit and scaffolded so that CLD students eventually learn how to comprehend vocabulary on their own (Swan, 2003).

When effectively scaffolding students' learning, educators: (a) link to and build on what students bring with them to school including their language, culture, understandings, and experiences; (b) provide the kind of support to enable students to learn successfully through collaboration with their teachers and with other students; and (c) provide a gradual release of responsibility to students to use what they have learned independently, in new contexts and for their own purposes (Gibbons, 2002). Scaffolding provides the support to help all students bridge the gap between what they already know and new information they are learning (Graves et al., 1994).

According to Echevarria, Vogt, and Short (2000), educators verbally scaffold by using a variety of questioning techniques to prompt, guide, and support second language learners as they develop higher levels of thinking and enhance their English skills. Scaffolding can also consist of the teacher modeling and contextualizing the academic language by using visuals, gestures, demonstrations, and hands-on activities that involve students engaging with the academic language (Gibbons, 2002). Procedural scaffolding refers to the use of grouping configurations that provide different levels of support to students as they gain greater levels of English language proficiency and skill (Echevarria, Vogt, & Short, 2000).

Another instructional "tool" that grade-level teachers can use with their CLD students to increase their cognitive understanding of academic vocabulary is wait time. Wait time allows CLD students an opportunity to participate with their peers in

classroom discussions and is discussed in the following section.

Wait Time

Wait time is the amount of time that a teacher waits after asking a question before he or she calls on someone in the class to answer. Educators need to be aware of the fact that CLD students, as well as other students in the classroom, need to have sufficient wait time in order to process a question or frame an answer. Slavin & Cheung (2003) assert that when teachers increase wait time, they convey the message that they believe the students can think of a response to a question or acknowledge the meaning of vocabulary words. Wait time is critical for CLD students. By establishing wait time, the educator provides opportunities for students to be reflective throughout the lesson. Lacina and Newman (2005) point out that CLD students may need more wait time because they need extra time to translate the question into their native language, think of an answer, and then translate the answer back into English.

Sociocultural Processes of the Prism Model

Sociocultural processes are at the core of the prism model. Central to a student's acquisition of language are all the social and cultural processes that occur in daily life, including those of his or her past, present, and future. These processes take place in the contexts of home and community as well as school. Sociocultural processes are forces that can strongly influence a student's response to the new language, affecting the process positively only when the student is in a socioculturally supportive environment. In school environments, educators need to consider the stressors that inhibit or enhance CLD students' learning. For example, prejudice and discrimination negatively influence students' achievement. For many CLD students, their "sociocultural context also includes poverty, attendance in under-funded schools, low social status accorded to certain ethnic and immigrant groups, familial stress, and incompatibility between home and school environments (e.g., language differences)" (International Reading Association and the National Institute of Child Health and Human Development, 2007, p. 3). On the other hand, a student's positive identification with his or her own culture leads to increased academic success and improved self-concept (Carrasquillo & Rodriquez, 2002).

Thomas and Collier (2002) found that it is crucial that educators provide a socioculturally supportive classroom environment for CLD students that allows for culture, natural language, academic, and cognitive components to flourish. As Bredekamp and Copple (1997) explain, "Because culture and language are critical components of student development, instruction cannot be developmentally appropriate unless it is responsive to cultural and linguistic diversity" (p. 4). Nieto (1999) emphasizes the importance of affirming students' cultural experiences in order to build positive relationships with students and make connections that facilitate learning.

In their efforts to appropriately serve the needs of CLD students, effective teachers reflect on both their own dispositions and their classroom conditions.

Teacher Dispositions

As humans, we all have personal histories and cultural backgrounds that shape the ways we view the world and act on and within it (Eisner, 1998). For us educators, this means that we must develop an awareness that teaching practices in the United States, in general, are based on European American cultural norms and values (Gay, 2000). These norms and values can vary significantly from the cultural norms and values of many CLD students. Moreover, our beliefs and norms for engaging in interactions may be very different from theirs (Gee, 1996). Rather than viewing cultural and linguistic differences among students as barriers, it is recommended that teachers embrace such differences as valued strengths that contribute to the collective culture of the classroom. Our ability to adjust our conceptual lenses in our work requires an understanding of the importance of attending carefully to our own dispositions and beliefs as well as our own knowledge base (Major & Brock, 2003). Our knowledge about language and culture can influence our interpretations of instructional encounters with CLD students and shape the ways we make instructional decisions.

Although most teachers have only the best intentions when working with CLD students in their classrooms, they may engage inadvertently in behaviors that are not helpful for these students (Valenzuela, 1999). Therefore, as Rochon, Herrera, Barnhardt, & Brisk (2002) assert, teachers "must learn to reflect upon (test the validity of) the influence of their cultural filter upon perspectives and actions in practice with diversity" (p. 5). Peregoy and Boyle (2004) suggest that educators become aware of, honor, and

build upon students' personal backgrounds and cultures. When educators get to know their students individually, they are better able to select appropriate and engaging reading materials, scaffold, and understand students' interpretations of content material (Brisk & Harrington, 2000). Moreover, Brock and Raphael (2005) note that "effective teachers of students from diverse backgrounds understand that the students themselves can provide valuable insights into their thinking, learning, and lives that we, as educators, can draw from as we design instruction for them" (p. 6).

Teachers need to not only be aware of the cultural and linguistic knowledge and skills that CLD students bring to the classroom but also set up classroom conditions where all students can advance academically. For CLD students to learn in the classroom setting, they must feel comfortable and supported.

Classroom Conditions for CLD Students

Teachers need to maintain high expectations for academic achievement while creating a warm, positive learning environment that supports students' needs and embraces their diverse cultural perspectives (Waxman & Tellez, 2002). If a CLD student feels unwelcome or uncomfortable in the classroom, his or her internal affective filter will be raised and the student's academic achievement will be affected (Lacina & Newman, 2005). Krashen (1985) developed the Affective Filter Hypothesis, which describes a student's affective filter as an internal emotional state that can block his or her language acquisition or academic capabilities. When a student stays in a negative emotional state (such as lack of motivation or lack of self-confidence) or experiences learning anxiety, this stress acts as a barrier that hinders and obstructs learning. In contrast, when a student feels safe, valued, and respected within a nurturing environment, his or her affective filter is lowered and the student can attain a higher level of academic achievement.

For students to feel supported, classroom conditions needs to be cooperative rather than competitive or highly evaluative (Swan, 2003). An effective learning environment promotes the use of vocabulary strategies where there is a relevant exchange of information between CLD students and their teacher and classmates. Successful grade-level teachers continually model academic language, encourage CLD students' participation in classroom discussions, welcome all students' contributions, and deliver

supportive feedback (Morrow, 1997; Stipek, 2002). In this way, educators help CLD students achieve both linguistic and academic success.

The IBA Framework

The IBA Framework for this study (see Figure 2.1 on p. 57) utilizes targeted vocabulary strategies that are based on the literature of effective vocabulary instruction for all students; however, these strategies also incorporate critical considerations for second language learners. The IBA Framework reflects the previously outlined characteristics of effective vocabulary instruction (Allen, 1999; Carr & Wixson, 1996; Nagy, 1998; Watts, 1995) by:

- Accessing students' background and prior knowledge.
- Connecting unknown vocabulary words to known knowledge.
- Ensuring opportunities for meaningful use in which students are engaged with the vocabulary words and provided with multiple exposures.
- Focusing on higher-level word knowledge.

The IBA Framework also embeds the critical components of second language acquisition by incorporating the linguistic, academic, cognitive, and sociocultural processes of the prism model (Thomas & Collier, 1997) that were detailed in this chapter. These critical second language components are integrated with the effective characteristics of vocabulary instruction to provide grade-level teachers with best practices to address the academic vocabulary needs of CLD students in their classrooms.

The National Reading Panel (2000) report acknowledges that with regard to reading instruction with second language learners, there is remarkably little direct, relevant research. This lack of research contrasts sharply with the number of studies involving native English speakers and vocabulary instruction. August and Shanahan (2006) note the following:

> There is a great need for more and better research into what schools should do to improve literacy among English language learners. Beyond the obvious need for more studies and more replications further evaluating promising instructional innovations, there is a need for a more sophisticated approach to research (which takes into account that) educational outcomes may be influenced by individual,

> sociocultural, cross-linguistic, and development factors. What is needed is an ambitious research agenda that pursues the development and systematic analysis of the effectiveness of instructional routines to foster success within the context of these individual and contextual factors that moderate and mediate literacy learning outcomes for language minority students. (p. 361)

Moreover, a publication by the International Reading Association (2007) developed in conjunction with the National Institute of Child Health and Human Development states:

> . . . research has demonstrated that ELL students generally master decoding and fluency fairly quickly and well, but the areas of vocabulary, background knowledge, and reading comprehension have not been well studied. It is essential that research be conducted on how best to teach vocabulary and instructional strategies for supporting the development of reading comprehension. (p. 7)

This research study addresses this notable lack of research on effective vocabulary instruction with CLD students.

The research that has been conducted with CLD students indicates that what is known and effective about vocabulary instruction for native English speakers applies also to second language learners (August, 2004; Carlo et al., 2004; Padak, 2006). However, educators need to make critical adjustments in grade-level instruction for second language learners. Because CLD students are learning English later in their lives, their vocabulary learning needs to be accelerated (Graves & Fitzgerald, 2003). Vocabulary development for CLD students requires special attention to the students' cultural and linguistic background knowledge. Therefore, the notion that what is good instruction for native English speakers is also good instruction for CLD students can be a misconception (Harper & de Jong, 2004).

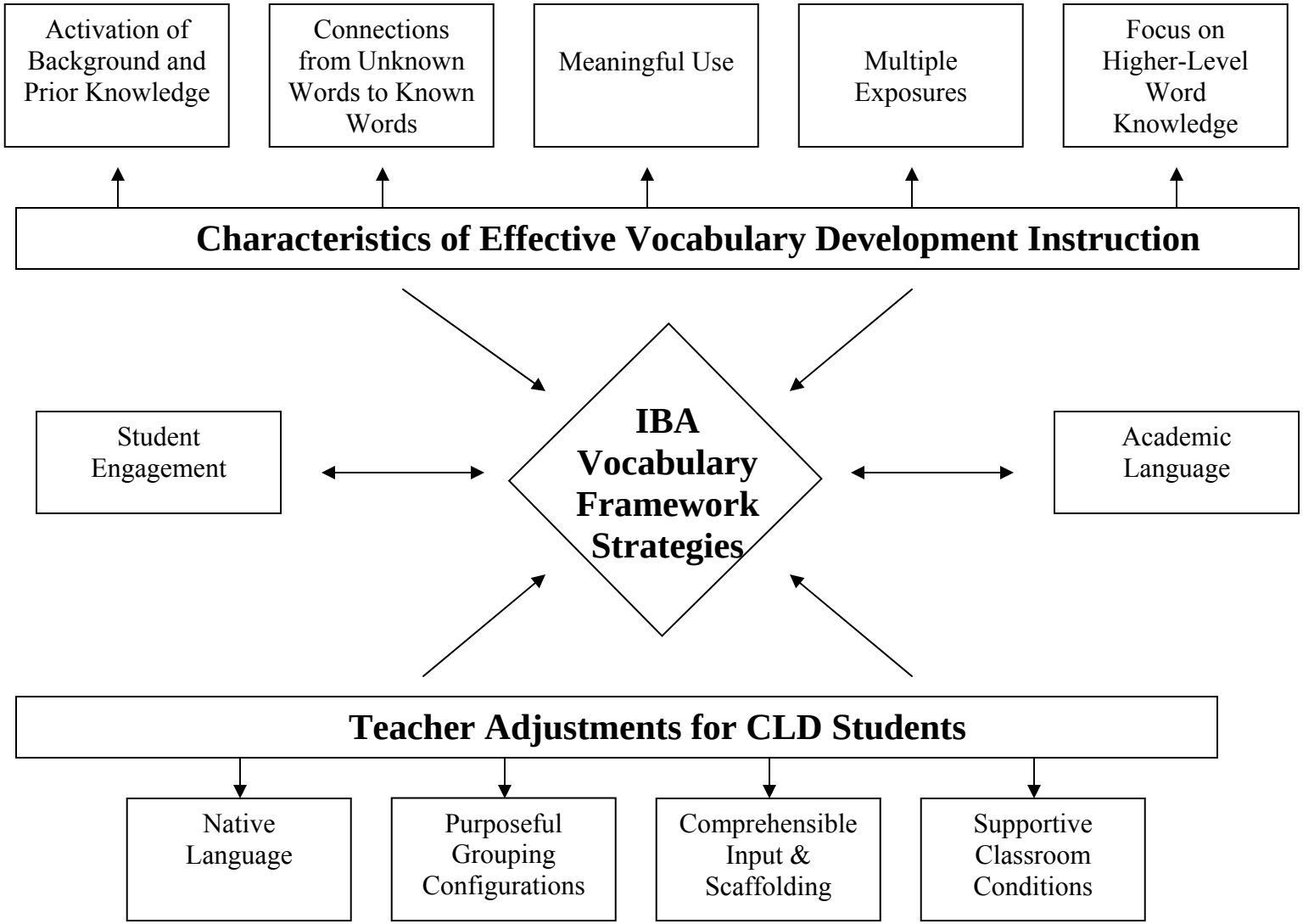
The National Literacy Panel's preliminary results (August, 2004) indicate that there are some differences that exist between the two language groups (native-English-speaking students and CLD students). The major difference is that CLD students generally require more distinctive scaffolding from the grade-level teacher as well as a focus on vocabulary using research-based strategies (Padak, 2006). Because CLD students may not know many of the English vocabulary words that comprise the foundation of children's early vocabulary, they need even more explicit teaching and

support than native English speakers in order to learn the new words (Gersten & Geva, 2003). If grade-level teachers do not address CLD students' vocabulary needs, the achievement gap between CLD students and native English speakers will continue to widen (Carlo et al., 2004).

Research has shown that when upper-elementary-level CLD students receive research-based vocabulary instruction accompanying the texts they read in school, they can learn new vocabulary at the same rate as native English speakers (Carlo et al., 2004). The targeted vocabulary strategies selected for this study are supported by the research presented. During implementation of the IBA Intervention, which is based on the IBA Framework, grade-level teachers tailor the selected vocabulary strategies to meet individual students' needs using their grade-level text. The IBA Intervention creates an important foundation for CLD students' vocabulary comprehension, acquisition of academic English, and attainment of high academic standards.

According to the National Reading Panel (2000), there is no single instructional vocabulary strategy that results in optimal vocabulary learning for a student. The targeted vocabulary strategies in this study are interactive strategies that activate the background and prior knowledge of CLD students. The targeted vocabulary strategies are designed to have students actively engaged with the academic vocabulary words throughout the before-during-after progression of instruction. The strategies that are used in the IBA Intervention are detailed in Chapter Three.

Figure 2.1 IBA vocabulary framework.



Summary

This chapter presented an extensive review of the theory and research on vocabulary instruction that forms the foundation for the IBA Framework. Educators incorporating this IBA Framework create student engagement opportunities, language rich experiences, social and academic interactions, and non-threatening environments that value and respect students' diverse cultural and linguistic backgrounds. Only in these kinds of instructional situations are CLD students able to fully develop their English language skills and academic knowledge (Cummins, 1996). The IBA Intervention includes vocabulary experiences throughout the before-during-after progression of daily vocabulary classroom instruction. The elements are not new; however, they are imperative for higher achievement among CLD students. This study utilized quantitative measures with qualitative support to assess the effectiveness of the framework elements and their impact on CLD students' vocabulary development.

Chapter Three presents the methodology for this quasi-experimental study. Within the discussion of the methodology, the research design and the IBA Intervention are presented. Site selection, sampling issues, and an overview of the development of field relationships follow. Data collection measures, both quantitative and qualitative, are then introduced. Chapter Three concludes with a discussion of data analysis procedures and the truth value of this study.

Chapter 3 - METHODOLOGY

The purpose of this quasi-experimental study was to investigate the effect of the educational intervention designed to increase the engagement level and vocabulary retention of fourth and fifth grade CLD students through targeted vocabulary strategies. These vocabulary strategies are tailored to activate students' background and prior knowledge. The IBA Intervention is based on the IBA Framework outlined in Chapter Two. This chapter includes a restatement of the research questions, research design, description of the intervention, site selection, sampling, developing field relations, means of data collection, data analysis procedures, and truth value.

Research Questions

As stated in Chapter One, this study was designed to answer the following quantitative and qualitative research questions.

Quantitative Research Question One:

To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' literacy achievement as measured by the Measures of Academic Progress (MAP) assessment?

Null Hypothesis:

There will be no significant difference in literacy achievement, as demonstrated in the change from the pre-intervention to post-intervention MAP assessment scores, between the treatment group and the control group.

Quantitative Research Question Two:

To what extent does the IBA Intervention, which is based on the IBA Framework, improve CLD students' engagement as measured by the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE)?

Null Hypothesis:

There will be no significant difference in student engagement, as demonstrated by ESCRIBE scores, between the treatment group and the control group.

Qualitative Research Question:

In what ways does implementation of the IBA Intervention, which is based on the IBA Framework, affect CLD students' retention of vocabulary?

Research Design

In addressing the need for further research in the area of vocabulary development, a 2007 document published jointly by the International Reading Association and the National Institute of Child Health and Human Development stated:

> Research addressing the effectiveness of instructional approaches or interventions, because it addresses the 'what words' question, requires experimental or quasi-experimental methods. . . Qualitative methods such as ethnographies and case studies can provide careful descriptions of the context in which instruction or intervention was delivered and changes in students and teacher behaviors. Where possible, mixed-method designs should be used, so that both data and descriptions can help us begin to understand why and how these approaches work and to generate additional hypotheses" (p. 7).

An exclusively quantitative design in this study would have allowed the researcher to address the intervention-based hypotheses that were identified. However, such a design would not have enabled the researcher to probe the ways the intervention operated to influence the retention of vocabulary among target CLD students (Condelli & Wrigley, 2004). Through the "thick, rich" descriptive observations that occurred during the study (Lincoln & Guba, 1985), the qualitative research process provided the researcher with insights into how the findings can be translated into practice. By combining quantitative and qualitative methodologies, the researcher was able to obtain a more complete understanding of the intervention's effectiveness with CLD students.

In sum, the quasi-experimental research design for this study was selected for its appropriateness to the research questions and the purpose of the study. The study investigated the effects of the IBA Intervention on CLD students' vocabulary development. The study used quantitative measures with qualitative support to assess the effect of the instructional intervention, which is grounded in research on vocabulary instruction and second language acquisition.

Site Selection

A medium-sized Midwest school district with a student enrollment of 4,771 was selected because of its high concentration of CLD students, who represent 65% of the student population. This school district has received a federally-funded professional development grant that enables teacher participants to earn their ESL endorsement and receive Sheltered Instruction Observation Protocol (SIOP) (Echevarria et al., 2004) training to improve their educational practices with CLD students. From this school district, the Baum Intermediate School was selected for this study (Please note that pseudonyms are used protect the anonymity of the district, school, and participants.). Baum Intermediate School serves approximately 500 fourth, fifth, and sixth grade students. The school's ethnic makeup is 82% Hispanic, 13% Caucasian, 3% other, and 2% African-American. The school's socioeconomic status (SES) is based on free and reduced lunch. Eighty-five percent of the student population receives lunch support.

In this school setting, newcomer and CLD students with limited English proficiency receive one class period each day of self-contained English as a second language (ESL) instruction from licensed ESL teachers. The CLD students spend the majority of their time in the regular classroom setting with teachers who have or are obtaining their ESL certification. All the teachers at the school received approximately six hours of in-service training in sheltering instruction (SIOP) for CLD students within the same academic year as implementation of the IBA Intervention.

This setting provided the researcher with an opportunity to study the impact of the IBA Intervention on CLD students' vocabulary development. Baum Intermediate School was purposefully selected because it met the criteria of being:

1. A district with a significant population of CLD students.
2. A district with grade-level teachers who have or are working toward their ESL endorsement and who are receiving continual on-site professional development training in Sheltered Instruction Observation Protocol (SIOP).

The following section describes the process by which the researcher selected teachers of students in the treatment group and teachers of students in the control group.

Teacher Selection

Originally, 24 classroom teachers volunteered to participate in the study. These educators ranged from first-year teachers to veteran professionals, each with at least 6 hours of SIOP professional development training. However, due to the nature of the study, the researcher and administration discussed who should participate in the study. Through numerous conversations with administration and with the help of their recommendations, the researcher selected 10 participating teachers. Several factors influenced the choice of teachers: the presence of CLD students that represent the three levels of English language proficiency (Non-English Proficiency (NEP), Limited English Proficiency (LEP), and Fluent English Proficiency (FEP)), teacher willingness to have the research conducted in the classroom, teacher use of a variety of vocabulary strategies, content area (reading, language arts, science, and social studies), and grade level. Table 3.1 presents the self-reported background information for each participating teacher.

Table 3.1 *Background of Teacher Participants*

Teacher participating in the Treatment Group	**Grade Level**	**Ethnicity**	**Years taught**	**Teaching in the same state they were born.**	**Reside within 100 miles of the place grew up.**
Classroom A	4th	European (Anglo)-American	1	No	No
Classroom B	4th	European (Anglo)-American	8	No	Yes
Classroom C	5th	European (Anglo)-American	1	No	No
Classroom D	5th	European (Anglo)-American	3	No	No
Classroom E	5th	European (Anglo)-American	14	No	Yes
Teacher participating in the Control Group	**Grade Level**	**Ethnicity**	**Years taught**	**Teaching in the same state they were born.**	**Reside within 100 miles of the place grew up.**
Classroom V	4th	European (Anglo)-American	5	Yes	Yes
Classroom W	4th	European (Anglo)-American	1	No	Yes
Classroom X	5th	European (Anglo)-American	6	No	Yes
Classroom Y	5th	European (Anglo)-American	1	Yes	No
Classroom Z	5th	European (Anglo)-American	8	Yes	Yes

Sampling

Sampling in research is the process of selecting participants from a population of interest (Krathwohl, 1998). The following subsections outline the quantitative and qualitative sampling of the study.

Quantitative Sampling

The participants in this study were grade-level CLD students from Baum Intermediate School, a medium-sized Midwest school district with a unique population of culturally diverse students and families. The participants, who spoke Spanish as their native language and who were learning English as their second language, were from fourth and fifth grade classrooms. The selection of these grade levels was based upon the literature review, which discussed the well-documented national trend of declining literacy after the fourth grade for grade-level students (Chall & Jacob, 2003). The five treatment classrooms and the five control classrooms for this study were located in the same school setting. As a result, the demographics of the student populations in the 10 classrooms were comparable, with a high percentage of CLD students who were native Spanish speakers.

Using the purposive sampling technique, 30 students were selected from the Baum Intermediate School to participate in this study. Purposive sampling is a sampling method in which participants are chosen based on purpose of the study. According to Merriam (1998), "purposive sampling is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (p. 61). The selected students were from either the fourth or fifth grade, which were the grade levels targeted for this study. The participants were native-Spanish-speaking students for whom English was their second language. Information regarding the native language of students was found on the school's enrollment forms and home language surveys where a student's native language identification and classification of English language proficiency level are indicated. The CLD students' level of English language proficiency was determined using the results of the district's English language proficiency test, the Language Assessment Scale (LAS), and last year's KELPA (Kansas English Language Proficiency Assessment) test results. The KELPA assesses CLD students' speaking, reading, and writing proficiencies in English. These language proficiency assessments are conducted yearly by the students' ESL teachers.

Students are designated as non-English proficient (NEP), limited English proficient (LEP), or fluent English proficient (FEP) depending on the individual's results

from the LAS and KELPA assessments. According to the KELPA assessment manual (2006), the NEP classification refers to "students who are just beginning to understand and respond to simple routine communication through those who can respond with more ease to a variety of social communication tasks" (p. 5). The manual indicates that with regard to the LEP classification, "students at this level are able to understand and be understood in many to most social communication situations. They are gaining increasing competence in the more cognitively demanding requirements of content areas; however, they are not yet ready to fully participate in academic content areas without linguistic support" (p. 5). Regarding the FEP classification, the manual states that "students at this level are able to understand and communicate effectively with various audiences on a wide range of familiar and new topics to meet social and academic demands. They are able to achieve in content areas comparable to native speakers, but may still need limited linguistic support" (p. 5).

At the time of the IBA Intervention, the Baum Intermediate School had no students who were classified as NEP. However, there were CLD students who were classified as LEP. The district further distinguishes among LEP students to indicate those students who have very limited English proficiency skills and need multiple classroom accommodations (LEPb) and those with a higher level of English proficiency (LEPd). CLD students with English language proficiency resembling that of fluent English speakers are classified as FEP. However, these CLD students still need accommodations made for their English language needs.

Based on conversations and recommendations by both the ESL teachers and grade-level teachers, the researcher selected the participants for this study. Fifteen students were part of the treatment group and 15 were part of the control group. With regard to the treatment group, eight participants were female and seven participants were male. Five participants were in fourth grade, while 10 participants were in fifth grade. Five participants were classified as LEPb, five participants were identified as LEPd, and five participants were classified as FEP. In the control group, six participants were female and nine participants were male. Five participants were in fourth grade, while 10 participants were in fifth grade. Five participants were classified as LEPb, five participants were identified as LEPd, and five participants were classified as FEP.

Biographical information about each student's age, grade level, and prior academic achievement was obtained from standard district forms. The researcher completed a CLD student biography on each of the participants to gain additional information (Herrera & Murry, 2005). Table 3.2 summarizes the background information for each participating student as reported by students, teachers, and school records.

Table 3.2 *Background of Student Participants*

Treatment Group					
Pseudonym Name of Student	**Grade**	**Home Country/ State**	**Years in the U.S.**	**English Language Proficiency Level**	**Language and Cultural**
Anna	4th	Mexico	6	LEPb	Born in Mexico and came to the U.S. at the age of four. Attended school up to 2nd grade in Colorado until moved to current location in 3rd grade.
Maria	4th	U.S.	10	LEPd	Both parents born in Mexico and only speaks and reads Spanish at home.
Blanca	4th	U.S.	10	FEP	Both parents and two older sisters were born in Mexico. Parents came to the U.S. while pregnant with Blanca.
Carlos	4th	U.S.	11	LEPd	Both parents born in Mexico and only speaks Spanish. The parents do read to Carlos in Spanish at home.
Pedro	4th	U.S.	10	FEP	Born in Texas and attended school in Arizona up until 3rd grade. Had some school in Spanish while in Arizona.
Ruth	5th	El Salvador	5	LEPb	Not exposed to English until moving to the United States. Did not attend any form of schooling in Mexico.
Isamarie	5th	U.S.	11	LEPd	Born in Los Angles and was not exposed to much English until moving to Oklahoma at the age of 5. Attended school in Turpin, OK until moving during the 3rd grade school year.
Jose	5th	Mexico	3	FEP	Attended school in Mexico until the 2nd grade. When moved to the U.S., he attended a bilingual educational program until moving to current school last year. Fluent in English and Spanish.
Javier	5th	Mexico	5	LEPb	Born in Mexico and came to the U.S. at the age of 5. However, there has moved back and forth between the

					two countries. There was a lot of interrupted schooling.
Marisol	5th	U.S.	11	LEPd	Born in Arizona where attended school until the 1st half of the 4th grade. While in school in Arizona, there was a lot of interrupted schooling moving between San Luis, AZ and Meza, AZ.
Daniela	5th	Mexico	10	FEP	Both parents born in Mexico and only speaks and reads Spanish at home.
Lupe	5th	Mexico	3	LEPb	Born in Mexico and attended 2 years of school in Mexico before coming to the U.S.
Robert	5th	U.S.	11	LEPd	Born in Oklahoma and attended school there until 3rd grade.
Ugo	5th	Mexico	9	FEP	Born in Mexico and came to the U.S. at the age of 2.
Miguel	5th	Mexico	3	LEPb	Born in Mexico and had some schooling there. Can read and write in Spanish.

Qualitative Sampling

The purposive sampling technique was used to select participants from the Baum Intermediate School who met the grade level, native language, and level of English language proficiency criteria for this study. As previously discussed, purposive sampling is a sampling method in which participants are chosen based on purpose of the study. Because the qualitative aspect of this study was designed to explore the affect of the IBA Intervention on CLD students' vocabulary retention, the participants selected for the qualitative intervention group were the same as those selected for the quantitative treatment group. Therefore, the intervention group consisted of eight female participants and seven male participants. Five participants were in fourth grade, and 10 participants were in fifth grade. Five participants were classified as LEPb, five participants were identified as LEPd, and five participants were classified as FEP. Please refer back to Table 3.2 for a summary of the background information for each student participant selected for the qualitative aspect of this study.

IBA Intervention

The IBA Intervention reflects a synthesis of knowledge about best practices with the targeted outcome of increased vocabulary knowledge among CLD students. The IBA Intervention is based on the IBA Framework and reflects the latest research and literature on vocabulary considerations for CLD students. The intervention is composed of targeted vocabulary strategies that incorporate the characteristics of effective vocabulary instruction and second language acquisition. The IBA Intervention was designed to enhance student engagement and retention of academic vocabulary and increase CLD students' usage of academic words in their vocabularies. The IBA Intervention provides necessary characteristics of effective vocabulary instruction by accessing students' background knowledge, connecting unknown vocabulary words to known knowledge, and providing opportunities for meaningful use and multiple exposures to the vocabulary words in order that students might attain higher-level word knowledge. The IBA Intervention simultaneously addresses the students' second language needs through native language support, comprehensible input, and scaffolding.

The vocabulary strategies of the IBA Intervention were purposefully selected because each encompasses all the components that were detailed in the IBA Framework. Each of the vocabulary strategies activates the student's prior and background knowledge, *igniting* the CLD student's engagement level in the "before" phase of the targeted vocabulary strategy. During the vocabulary strategies, the teachers *bridge* the student's personal connections from their prior and background knowledge to the new unknown vocabulary words. The students are engaged in meaningful use of the academic vocabulary words throughout the vocabulary strategies, resulting in multiple exposures to the vocabulary words. The CLD students continually *associate* the vocabulary words with their existing understanding, which leads to a higher level of word knowledge. Throughout implementation of the targeted vocabulary strategies, the grade-level teacher makes accommodations for the CLD student's language acquisition needs by providing comprehensible input, scaffolding, creating purposeful groupings, allowing use of the native language, and providing an educational setting conducive to learning.

The targeted vocabulary strategies of the IBA Intervention are designed to actively engage CLD students with the academic vocabulary words throughout the

before, during, and after progression of instruction. Research indicates that many grade-level teachers introduce vocabulary words before the lesson; however, few teachers realize that they can teach vocabulary during or after the lesson (Konapack & Williams, 1994; Watts, 1995). Students' resulting multiple exposures to the vocabulary words in meaningful activities is intended to lead them to reach a higher level of word knowledge that solidifies the words and corresponding meanings in their permanent memory banks.

Table 3.3 delineates the key components for the before, during, and after vocabulary strategies that were used throughout the study. Column two and three describe the vocabulary strategy and its purpose. The fourth column aligns each strategy with specific Teaching English to Speakers of Other Languages (TESOL) national standards and state curricular standards.

Table 3.3 *Targeted Vocabulary Strategies in the IBA Intervention*

Vocabulary Strategies (B-D-A)	Description of Vocabulary Strategies	Purpose of Vocabulary Strategies	Alignment with TESOL and State Standards
Before Phase			
DOTS (Herrera, Kavimandan, Perez, & Wessels, 2008)	Students are given a chart with boxes for each letter of the alphabet. The students write down all the words they know about the topic on the DOTS chart and predict the words they think might relate to the topic.	DOTS allows students to tap into their prior and background knowledge as they are generating words related to the topic or new vocabulary words.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: S1.B3 (KS, 2003) The learner will be able to expand vocabulary.
Word Splash (Beers, 2003)	The teachers chooses 4-5 key vocabulary words from the text and students write a sentence describing what they think the story will be about (a prediction statement).	Word Splash elicits students' prior and background knowledge before the vocabulary lesson.	**TESOL Standard:** Goal 2, Standard 3 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic knowledge. **State Standard:** Source: 1.4.3 (KS, 2003) The learner will be able to use prior knowledge and content to make, revise, and confirm predictions.
Vocabulary Quilt (Herrera, 2007)	Within individual squares on a folded piece of paper are key vocabulary words. Students write or draw what comes to mind when they read the vocabulary word.	Vocabulary Quilt provides the teacher with baseline information on the students' background and prior knowledge about the vocabulary words from the text.	**TESOL Standard:** Goal 2, Standard 3 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic knowledge. **State Standard:**

			Source: 1.4.3 (KS, 2003) The learner will be able to use prior knowledge and content to make, revise, and confirm predictions.
Linking Language (Herrera, 2007)	Pictures from the text are located in the center of chart paper. Students are given a writing instrument and are asked to silently write or draw that they think of or feel when they look at the pictures.	Linking Language has students write, in any language, words they relate to the pictures. Making connections to previous experiences validates students' background knowledge while they are constructing the meaning of vocabulary words.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: S1.B3 (KS, 2003) The learner will be able to expand vocabulary.
U-C-Me (Herrera, Kavimandan, Perez, & Wessels, 2008)	This graphic organizer tool allows the teacher to active students' background knowledge by having them share what they already know about the vocabulary word.	U-C-Me provides structure for the instruction of vocabulary words while indicating connections between known and unknown information.	**TESOL Standard:** Goal 2, Standard 3 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic knowledge. **State Standard:** Source: 3.1.1 (KS, 2003) The learner will be able to write notes, graphic organizers, journal entries, learning logs and self-reflections while learning in content areas.
Mind Map (Buzan, 1989)	Mind maps involve linguistic and non-linguistic representations of knowledge about the meaning of the vocabulary word. Mind maps vary with each student because they show how individual students visualize concepts.	Mind maps allow students' use of both drawings and words to creatively demonstrate their understanding of the vocabulary.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide

			subject matter information in spoken and written form. **State Standard:** Source: 3.4.1 (KS, 2003) The learner will be able to use a variety of organizational strategies such as webbing or concept mapping.
Vocabulary Foldable (Montano-Harmon, 2001)	This graphic organizer tool enables students to keep track of new vocabulary words and concepts to be learned throughout the lesson on folded pieces of construction paper. Students write each vocabulary word on a separate line of folded paper.	Vocabulary foldables help students organize information related to key vocabulary and concepts. This is very tactile and hands-on vocabulary tool.	**TESOL Standard:** Goal 2, Standard 3 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic knowledge. **State Standard:** Source: 3.1.1 (KS, 2003) The learner will be able to write notes, graphic organizers, journal entries, learning logs and self-reflections while learning in content areas.
Rivet Books (Cunningham et al., 2000)	Rivet Books are small books in which students record their prior and background knowledge related to a vocabulary word. These books provide students with an idea of what to focus on in their upcoming reading.	Rivet Books are designed to help students activate their prior knowledge about a topic and make predictions about what is to be read.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: Standard 4 (KS, 2003) The learner will be able to apply reading and writing skills to demonstrate learning.
During Phase			
DOTS	Students write the target	Students "connect the	**TESOL Standard:**

(Herrera, Kavimandan, Perez, & Wessels, 2008)	vocabulary around the chart as it is introduced during the lesson. Students then draw lines to create associations and demonstrate connections between the words in their A-Z boxes and those words around the outside of the chart.	DOTS" by linking to and building on what they already know to develop and reinforce their understanding of the target vocabulary. This strategy helps students develop word consciousness.	Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: S1.B3 (KS, 2003) The learner will be able to expand vocabulary.
Vocabulary Quilt (Herrera, 2007)	Students become individual experts on a specific vocabulary word and share that information with others in their collaborative group.	Vocabulary Quilt provides students with a concrete tool they can continually refer back to as they connect with their activated existing knowledge that was recorded in the before phase of vocabulary instruction.	**TESOL Standard:** Goal 2, Standard 3 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic knowledge. **State Standard:** Source: 1.4.3 (KS, 2003) The learner will be able to use prior knowledge and content to make, revise, and confirm predictions.
Linking Language (Herrera, 2007)	The teacher makes connections between the selected vocabulary words from the text and the words that the students generated.	In using Linking Language, students are engaged in meaningful use of the vocabulary words as they make connections between known words and new vocabulary.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: S1.B3 (KS, 2003) The learner will be able to expand vocabulary.
U-C-Me (Herrera,	Students continue to add newly learned information	The U-C-Me graphic organizer tool allows	**TESOL Standard:** Goal 2, Standard 3

Kavimandan, Perez, & Wessels, 2008)	about the concept and the vocabulary words from the text.	students to be cognitively active during the lesson. Students are engaged as they process and reorganize newly learned information.	(TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic knowledge. **State Standard:** Source: 3.1.1 (KS, 2003) The learner will be able to write notes, graphic organizers, journal entries, learning logs and self-reflections while learning in content areas.
Mind Map (Buzan, 1989)	Students make connections by drawing lines between words and pictures that have associations with each other.	As students branch out and make connections between ideas on their mind maps, they map knowledge in a manner that will help them understand and remember new information.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: 3.4.1 (KS, 2003) The learner will be able to use a variety of organizational strategies such as webbing or concept mapping.
Vocabulary Foldable (Montano-Harmon, 2001)	As vocabulary words are introduced, students add student-friendly definitions and non-linguistic representations to show their understanding of the vocabulary and concepts.	Student-friendly definitions and non-linguistic representations on Vocabulary foldables allow students at different linguistic levels to participate and demonstrate their knowledge. The process of defining vocabulary terms in their own words stretches CLD students cognitively.	**TESOL Standard:** Goal 2, Standard 3 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic knowledge. **State Standard:** Source: 3.1.1 (KS, 2003) The learner will be

			able to write notes, graphic organizers, journal entries, learning logs and self-reflections while learning in content areas.
Rivet Books (Cunningham et al., 2000).	On each page of the Rivet Book, students write the definition of the word after it has been revealed and discussed. Students can also sketch or write something that will remind them of the meaning of the word.	Students are able to look for these "rivet" words as they read the text. As they connect new information with their prior and background knowledge, students enhance their comprehension and retention of the vocabulary.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: Standard 4 (KS, 2003) The learner will be able to apply reading and writing skills to demonstrate learning.
After Phase			
DOTS (Herrera, Kavimandan, Perez, & Wessels, 2008)	After completing the reading, students should look back at the text to see if there are any new words they would like to add to their DOTS chart. These can be words the students want to remember or words that are new to them.	The DOTS chart provides students with something concrete to hold on to throughout the lesson and use as a study tool after the lesson.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: S1.B3 (KS, 2003) The learner will be able to expand vocabulary.
Word Splash (Beers, 2003)	Students return to their prediction statements to correct inaccuracies and record their new understanding of the vocabulary words' meaning.	Word Splash allows students to reflect on their learning and make connections using the vocabulary. Such application of new knowledge is critical to students' retention of the vocabulary.	**TESOL Standard:** Goal 2, Standard 3 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic

			knowledge. **State Standard:** Source: 1.4.3 (KS, 2003) The learner will be able to use prior knowledge and content to make, revise, and confirm predictions.
Vocabulary Quilt (Herrera, 2007)	Students generate student-friendly definitions of the newly learned vocabulary words.	Vocabulary Quilt has students revisit their original responses and allows them to reflect on their new understanding of the vocabulary words.	**TESOL Standard:** Goal 2, Standard 3 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic knowledge. **State Standard:** Source: 1.4.3 (KS, 2003) The learner will be able to use prior knowledge and content to make, revise, and confirm predictions.
U-C-Me (Herrera, Kavimandan, Perez, & Wessels, 2008)	Students reflect on their overall learnings related to the vocabulary and concepts.	The U-C-Me summarization tool allows teachers to see how students interpreted what was taught and what was read and then assess the accuracy of students' interpretations.	**TESOL Standard:** Goal 2, Standard 3 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic knowledge. **State Standard:** Source: 3.1.1 (KS, 2003) The learner will be able to write notes, graphic organizers, journal entries, learning logs and self-reflections while learning in content areas.
Mind Map (Buzan, 1989)	Students create a new mind map combining newly learned vocabulary and previous knowledge.	The new mind map allows the teacher to informally assess students' comprehension of the concept and associated vocabulary words.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students

			will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: 3.4.1 (KS, 2003) The learner will be able to use a variety of organizational strategies such as webbing or concept mapping.
Vocabulary Foldable (Montano-Harmon, 2001)	Students reflect on their overall learnings related to the vocabulary and concepts in a low-anxiety manner.	Vocabulary Foldables provide students with a vocabulary builder/word bank. This hands-on tool can also serve as a study tool.	**TESOL Standard:** Goal 2, Standard 3 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use appropriate cognitive learning strategies to construct and apply academic knowledge. **State Standard:** Source: 3.1.1 (KS, 2003) The learner will be able to write notes, graphic organizers, journal entries, learning logs and self-reflections while learning in content areas.
Rivet Books (Cunningham et al., 2000)	After students have read the text or participated in the vocabulary discussion, they can summarize their understanding of the vocabulary by using the word in a sentence.	Rivet Books help students process the vocabulary words in a way that encourages meaningful personal connections. Such connections promote students' word consciousness.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: Standard 4 (KS, 2003) The learner will be able to apply reading and writing skills to demonstrate learning.

Tic-Tac-Tell (Herrera, Kavimandan, Perez, & Wessels, 2008)	Students are given a tic-tac-toe grid on which vocabulary words are randomly placed. Students create sentences using three consecutive words in each sentence.	Tic-Tac-Tell prompts students to apply their knowledge of vocabulary words through writing sentences. This strategy enables the teacher to authentically assess students' understanding of the vocabulary. It also encourages students' self-assessment of their understanding of the words.	**TESOL Standard:** Goal 2, Standard 2 (TESOL, 2001): To use English to achieve academically in all content areas: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. **State Standard:** Source: Standard 4 (KS, 2003) The learner will be able to apply reading and writing skills to demonstrate learning.

Table 3.3 outlines the IBA Intervention by providing an overview of the targeted vocabulary strategies. Several of the strategies, such as Vocabulary Quilt, Linking Language, and U-C-Me, can be implemented throughout all phases of vocabulary instruction (before, during and after); however, some strategies, such as Tic-Tac-Tell, are only effective in a certain phase of the lesson (e.g., after the lesson). (Please note: Appendix E includes pictures of students' work artifacts created in response to the most frequently implemented strategies.).

The participating teachers in the treatment group used the targeted vocabulary strategies and selected vocabulary words from their grade-level literacy anthology. MacMillan McGraw-Hill Reading (2003) is the district's identified reading anthology. During the 110-120 minute reading block, the targeted vocabulary strategies were used along with the other literacy activities included in the district's curriculum. The control group continued with their pre-established literacy instruction methods. The district's literacy program was the Four-Blocks reading program (Cunningham, 2000), using MacMillan McGraw-Hill Reading anthologies and non-fiction and fiction trade/chapter books to supplement the series. Four-Blocks is a framework for reading and writing that includes all the components of a comprehensive instructional reading program. The four components of the program are self-selected reading, guided reading, writing block, and working with words (Cunningham, 2000). Table 3.4 outlines the daily schedule and Four-Blocks components used in the control group during reading instruction.

Table 3.4 *Control Group: Daily Schedule for Reading Block*

Four Block Reading	Minutes Daily	Description
Self-Selected Reading	20 Minutes	Students independently read from a book of their choosing. The books are of a variety of reading levels and genres. As students are reading, the teacher conferences individually with students. This allows the teacher to listen and take anecdotal records of each student reading.
Spelling and Working with Words	20 Minutes	Students learn to read and spell high-frequency words and learn the patterns, which allow them to decode and spell a multitude of words.
Writing	30 Minutes	The writing block resembles a writer's workshop structure. The block usually begins with a mini-lesson in which the teacher models writing and a skill or strategy. After the teacher has finished writing, the teacher and students use the editor's checklist to correct some mistakes in the passage. The students then work on their individual pieces of writing, which are based on self-generated topics. Students are at various stages of their writing projects (e.g., finishing a story, starting a new story, editing, illustrating). Students who are ready to publish their stories individually conference with the teacher.
Guided Reading	40 Minutes	Key vocabulary is introduced or reviewed through an activity or worksheet. This provides students with a warm-up for reading. The group then reads the text (and revisits the text) throughout the week. This reading may be completed individually, in pairs, or as a whole class. Throughout the week there are opportunities to review strategies or concepts previously discussed. Comprehension activities may include predicting, completing a story map (characters, setting, problem, and solution), sequencing, and using compare and contrast. The students then move into a simultaneous and independent oral reading (not choral reading) of the text. As the students read, the teacher responds to each student's reading, praising and guiding individuals in the use of concepts of print, reading skills, and strategies.

Table 3.5 outlines the daily schedule for the treatment group. As the table illustrates, teachers in the treatment group followed the same basic daily instructional format as teachers in the control group. However, during the Guided Reading component,

teachers in the treatment group incorporated a systematic and intentional use of targeted vocabulary strategies and academic vocabulary.

Table 3.5 *Treatment Group: Daily Schedule for Reading Block*

Four Block Reading	Minutes	Description
Self-Selected Reading	20 Minutes	Students independently read from a book of their choosing. The books are of a variety of reading levels and genres. As students are reading, the teacher conferences individually with students. This allows the teacher to listen and take anecdotal records of each student reading.
Spelling and Working with Words	20 Minutes	Students learn to read and spell high-frequency words and learn the patterns, which allow them to decode and spell a multitude of words.
Writing	30 Minutes	The writing block resembles a writer's workshop structure. The block usually begins with a mini-lesson in which the teacher models writing and a skill or strategy. After the teacher has finished writing, the teacher and students use the editor's checklist to correct some mistakes in the passage. The students then work on their individual pieces of writing, which are based on self-generated topics. Students are at various stages of their writing projects (e.g., finishing a story, starting a new story, editing, illustrating). Students who are ready to publish their stories individually conference with the teacher.
Guided Reading with IBA Vocabulary Intervention	40 Minutes	A targeted vocabulary strategy is used at the beginning of each week to introduce the targeted vocabulary words to the students. The vocabulary strategies activate students' prior and background knowledge related to the new vocabulary. Additional targeted vocabulary strategies encourage students continue to build upon and associate with their prior and background knowledge as they read the text (individually, in pairs, or as a whole class) and interact with the new vocabulary. Throughout this process, students continually build their vocabulary knowledge as well as their social and academic language skills. The teacher may use realia, visuals, and other concrete objects to help make the vocabulary words more comprehensible to the students. Throughout the week there are opportunities to review strategies or concepts previously discussed. CLD students are allowed to use their native language throughout implementation of the before-, during-, and after-the-lesson strategies.

Teachers involved in this study used the same instructional format every day in the academic week. However, each week the students worked with a different story and

different vocabulary words from the MacMillan McGraw-Hill Reading anthologies series and non-fiction and fiction trade/chapter books to supplement the series. Each grade level studied the same story/unit of the anthology series at the same time. Table 3.6 outlines the IBA Intervention timeline for this study.

Table 3.6 *IBA Intervention and Timeline*

	Site One:	**Site One:**	**Site Two:**	**Site Two:**
Week One: Pre-testing for Baseline Data Collection	Treatment Group, 4th Grade	Treatment Group, 5th Grade	Control Group, 4th Grade	Control Group, 5th Grade
Week Two-Week Seven: IBA Vocabulary Intervention with Treatment Group, Literacy Instruction with Control Group	Vocabulary Instruction with IBA Intervention 5 times a week during daily literacy block	Vocabulary Instruction with IBA Intervention 5 times a week during daily literacy block	Vocabulary Instruction with no Intervention 5 times a week during daily literacy block	Vocabulary Instruction with no Intervention 5 times a week during daily literacy block
Week Eight: Post-testing/Data Collection	Final Data Collection- All Participants	Final Data Collection- All Participants	Final Data Collection- All Participants	Final Data Collection- All Participants

The following section outlines the IBA Intervention Training for the teachers participating in the treatment group.

IBA Intervention Training

The teachers participating in the treatment group received one afternoon of training and continual on-site support on the IBA Framework and the vocabulary strategies used throughout the study. The initial training took place during the Professional Learning Community meeting (PLC time), which is scheduled weekly and provides the grade-level content-area teachers with a common time to plan, coordinate the curriculum, and discuss other curricular situations that might have occurred or are anticipated. The initial training was a two-hour session with individual teacher

consultation throughout the school day or after school. The individual teacher consultation time allowed the researcher and grade-level teacher to discuss any comments and concerns about the targeted vocabulary strategies. This consultation time also was used as a planning time for the upcoming anthology selection and the vocabulary words involved in the story.

Although all five of the grade-level teachers either had an ESL endorsement or were in the process of obtaining their ESL certification, the researcher reviewed the second language acquisition aspects of the IBA Framework. The researcher reviewed (a) the importance of native language, (b) ways to purposefully group students to increase students' academic and social interactions with vocabulary words, (c) how to incorporate visuals and other comprehensible input techniques along with teacher scaffolding to increase students' understanding of vocabulary, and (d) the necessity of making sure the classroom environment is supportive and accepting of the cultures students bring into the academic setting.

The researcher modeled each of the targeted vocabulary strategies emphasized throughout the IBA Intervention. All of the strategies were initially introduced during the SIOP training completed earlier in the year during staff development meetings. The researcher wanted to ensure that each grade-level teacher was able to connect the vocabulary strategies being modeled with the district's reading series. The researcher and teachers discussed how to implement each of the targeted vocabulary strategies for the beginning, middle, and end of the lesson. There was time set aside for the teachers to prepare and peer model the strategies with one another to develop confidence.

The researcher observed each classroom twice a week to ensure that the IBA Intervention was being implemented according to plan. Along with the classroom observations, the teachers and the researcher met on a weekly basis to debrief and discuss any implementation issues related to the IBA Intervention. The teacher-researcher debriefings were guided by reflections, concerns, and celebrations from the participating teachers. The debriefings were essential for sharing updates on individual student responses related to the multiple forms of expression, verbal interaction, and level of engagement observed within the classroom during a particular vocabulary strategy or other literacy activity. The debriefings also helped document differences in instructional

approaches and modifications the grade-level teachers made for the vocabulary and language instructional needs of the CLD students in their classrooms.

For example, during the third week of the IBA Intervention, the teacher of classroom E discussed bringing more comprehensible input into the nonfiction trade books students were using during science literacy time. The targeted vocabulary words were *igneous rock, crust, plate, core, mantle, sedimentary rock,* and *metaphoric rock*. The researcher and teacher discussed how to incorporate visuals after the students had activated their prior and background knowledge about the vocabulary words through a vocabulary quilt (SWA-VQB-2-CB). This allowed the teacher to see how visuals can be introduced to help clarify and make the words more comprehensible for students as well as support classroom discussion about each of the vocabulary words.

The researcher was committed to the ethical treatment of the participants who were selected for this study. The following section explains the researcher's actions toward this end.

Developing Field Relationships

Krathwohl (1998) stated that trust, rapport, access, reliability, and validity are critical to the success of conducting a quasi-experimental study. Issues related to ethics and entry to the research site are addressed in the following subsections. Reliability and validity are discussed later in the chapter.

Ethics

In this quasi-experimental study, the researcher demonstrated commitment to protecting the rights of the participants through the following actions: (a) the researcher protected the anonymity of the participants through the use of pseudonyms in all documentation related to the site and the sample; (b) the researcher disclosed the purpose of the research to all research participants; and (c) the researcher followed all the recommended guidelines for research by the Institutional Review Board for Research Involving Human Subjects at Kansas State University. According to Krathwohl (1998), it is critical to have individual informed consent for each participant. Because minors were participating in the study, the researcher had the parents sign the informed consent form on the behalf of their children. The informed consent forms were written in both English

and Spanish. The bilingual consent forms increased the likelihood that parents who were not fluent in English would understand the nature of the study and exactly what permission they were granting the researcher. In addition, all adults who participated in the study signed a consent form.

Gaining Entry

Although gaining access to the research site provides the sort of creative engagement necessary for a study, it can also be one of the most difficult and often neglected aspects of the study (Jorgensen, 1989). The researcher gained entry to the site via the federally funded professional development grant through which the teachers are receiving their ESL endorsement and SIOP professional development. To ensure entry, the researcher met with administrators and grade-level teachers to explain the intent of the research study, how data would be collected, and how long the research process would take. At this time, administrators and grade-level teachers discussed at length with the researcher any issues of concern. Recommendations made by administrators and teachers during this conversation were taken into consideration and incorporated into the research design.

Once approval and entry into the field was gained from all gatekeepers, the study began. Throughout the study, the researcher continually negotiated entrance and acceptance. Krathwohl (1998) stated that "negotiated entry is a continuous process that must be repeated at each level in the organization" (p. 255). Consequently, throughout the study, entry was negotiated on a weekly basis with all gatekeepers. The researcher was on site throughout the duration of the IBA Intervention to ensure ongoing communication and collaboration with key stakeholders. Finally, weekly meetings with researcher and the grade-level teachers and administration involved in the study offered those involved the opportunity to pose questions, provide input, and receive feedback.

Means of Data Collection

Data for this study was collected using both quantitative and qualitative techniques. Table 3.7 outlines the quantitative and qualitative data collection tools used in this study, their administration, and the frequency of their administration with participants. Each of these tools is discussed in detail in subsequent subsections.

Table 3.7 *Quantitative and Qualitative Data Collection Tools*

Quantitative Data Collection Tools		
Data Source	**Administration**	**Frequency of Administration**
Measures of Academic Progress (MAP)	Pre and Post Testing	January-April
Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE)	Weekly	Week One-Week Eight
Qualitative Data Collection Tools		
Data Source	**Administration**	**Frequency of Administration**
Participant Observations	Daily	Week One-Week Eight
Multiple Forms of Knowledge Expression ❖ Student Artifacts ❖ Student Writing Samples	Weekly	Week One-Week Eight
Informal Interviews	Daily	Week One-Week Eight

Quantitative Data Collection Tools

The quantitative data collection tools used in this study were the Measures of Academic Progress (MAP) assessment and the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE).

Measures of Academic Progress (MAP) Assessment

The Measures of Academic Progress (MAP) assessment was the quantitative data collection tool that was used to assess the academic literacy achievement of the participants in the study as well as meet the district's mandated testing requirements. The MAP assessment is a computer-adaptive, norm-referenced test developed by the

Northwest Evaluation Association (NWEA) and aligned to the content and structure of individual state standards. This unique diagnostic test adapts itself to the participant's literacy ability, accurately measuring the participant's current knowledge level and indicating areas the teacher can target in instruction to promote the student's academic growth. The purpose of the MAP assessment is different than the purpose of mastery tests. Typical mastery tests present every student with the same test, usually created for a specific grade level. The purpose of the MAP assessment is to indicate which students have met the benchmark for the grade, and which students have not yet learned the grade-level material. In addition, the MAP assessment is used to measure academic growth over time, independent of grade level or age. The MAP assessment is administered in September, January, and April/May. The researcher had access to each participant's individual scores from each of the testing windows.

The MAP assessment was used to measure the CLD students' overall academic literacy achievement throughout the duration of the study. According to the research outlined in Chapter Two, there is a close correlation between reading comprehension and students' vocabulary knowledge. The MAP assessment score allowed the researcher to measure the overall academic literacy growth when there was an explicit, intentional focus on vocabulary development throughout the literacy instruction.

The MAP assessment has an extensive item bank of questions that have been developed over a substantial period of time (Northwest Evaluation Association, n.d.). The result has been the collection of a significant amount of reliability evidence over time. Test and retest studies have consistently yielded statistically valid correlations between the multiple assessment events for the same group of students. The test-retest studies look at scores from the same students after a lapse of 7 to 12 months. The second test (or retest) is not the same test (Northwest Evaluation Association, n.d.). Rather, the second test is one that is comparable to the first, by virtue of its content and structure; however, it does differ in difficultly level of the test items. Content validity of the MAP assessment is assured by mapping existing content standards from a particular state or district. The multiple choice test items are selected for a specific test based on their match to the content standards as well as the test level of difficultly (Northwest Evaluation Association, n.d.).

Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE)

The Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE) is a computerized data collection tool and observation analysis system designed for use with CLD students. ESCRIBE was developed in the early 1990s by Carmen Arreaga-Mayer, Judith Carta, and Yolanda Tapia. ESCRIBE is described as "an observable coding system for the evaluation of instructional programs serving special education and mainstream culturally and linguistically diverse learners" (Arreaga-Mayer, Carta, &Tapia, 1992, p. 2). ESCRIBE addresses the increasing need for quantifiable data on students' classroom behaviors and language use as well as the efforts of teachers to teach CLD students. This electronic data collection technique allows a researcher to record what happens at a certain point in time over a specified duration of time. The data is recorded through momentary time sampling (intervals between 10 and 30 seconds).

ESCRIBE provides prompts for each set of data collected. The prompts run in cycles of variables. Each cycle begins with the coding of instructional environment variables (activity, materials, language of materials, and instructional grouping configurations). Codes for all four types of variables are recorded during the first 15-second interval of each cycle (Arreaga-Mayer, Carta, &Tapia, 1992). Then the cycle runs through six sets of alternating teacher variable intervals (15 seconds each) and student variable intervals (15 seconds each). Teacher variables include teacher definition, teacher focus, language of instruction, corrections-affirmations, and teacher behaviors. Student variables include language initiating/responding behaviors, oral responses, student language, and activity-related responses (Arreaga-Mayer, Carta, &Tapia, 1992). The researcher codes for all five teacher variables during each teacher variable interval and codes for all four student variables during each student variable interval. Each cycle lasts 3.25 minutes. For this study, each individual observation lasted approximately 30 minutes.

This study used an interval of 15 seconds for each 30-minute observation. The ESCRIBE coding system was used to assess individual students through observations and record the data on a laptop computer. The ESCRIBE program provided the researcher

with an auditory cue at the beginning of every interval. The researcher identified what was occurring in connection with the specific code category that the ESCRIBE program indicated was the focus for that moment's data collection. ESCRIBE was used to observe student engagement levels when the CLD students were actively involved in vocabulary instruction. This tool was selected because it allowed the researcher to track the level of students' engagement during implementation of the vocabulary strategies. The researcher was able to monitor participants on an individual basis in whole group, small group, and individual settings.

In establishing the validity of ESCRIBE, the researchers developed the ESCRIBE instrument after extensive research of effective instruction for CLD students. From this research, the researchers identified the key ecological variables that seemed to be the most influential on CLD students' academic achievement. Additionally, the researchers observed dozens of classrooms with a high level of bilingual students. They used the findings from the research and their observations to develop codes and corresponding behavioral definitions for these codes. In test piloting the codes, the researchers established an inter-rater reliability. The information found from the initial data collection process, the researchers shared their results with other researchers and grade-level teachers who provided feedback on the coding system. The researchers revised their initial coding system and ran a second study. From the second study, the variable themes emerged: stationary elements, instructional environment features, teacher language use/behavior, and student language use/behaviors. These themes their variable categories (Arreaga-Mayer & Greenwood, 1986; Arreaga-Mayer, Carta, & Tapia, 1994). The peer review, revision, and the second study established both the validity and reliability of the coding system.

Two weeks before data collection for this study began, the researcher participated in a three-day training session on data collection using ESCRIBE. This training included learning the definitions for all 110 codes, practicing using the instrument with one of the developers of the instrument, and establishing inter-rater reliability with one of the developers of the instrument. On the first day of the training session, the researcher and developer read and analyzed a variety of written scenarios to practice coding the contextual factors and student responses. On the second day of training, the instrument

developer observed the researcher's coding during three classroom observations and discussed any miscoding or situational issues that arose throughout the observations. On the third day, during the inter-rater reliability check, the researcher and the instrument developer coded the same student at the same time for three different observations with a different focus student for each observation. The first inter-rater reliability check yielded a reliability of 97.72%. The second inter-rater reliability check yielded a reliability of 98.57%. The third inter-rater reliability check yielded a reliability of 98.17%. The developers of ESCRIBE consider 85% inter-rater reliability acceptable (Arreaga-Mayer, Carta, & Tapia, 1992). The researcher for this study demonstrated extremely high inter-rater reliability with a developer of the research instrument.

Qualitative Data Collection Tools

The qualitative data collection tools used in this study were participant observations, multiple forms of knowledge expression (e.g., linguistic and non-linguistic representations) documented through student artifacts and student writing samples, and informal interviews. These ongoing sources of qualitative data were augmented by researcher fieldnotes.

Participant Observation

The researcher also used participant observation to collect data. Visiting the selected site as a participant observer is a challenging task. However, Lincoln and Guba (1981) state:

> In situations where motives, attitudes, beliefs, and values direct much, if not most of human activity, the most sophisticated instrumentation we possess is still the careful observer–the human being who can watch, see, listen…question, probe, and finally analyze and organize his direct experience. (p. 213)

Although using participant observations as a method of data collection is difficult, careful observation still remains one of the strongest tools available to the researcher. Denzin (1978) states that participant observation "simultaneously combines document analysis, interviewing of respondents and informants, direct participation and observation, and introspection" (p. 178). Thus, the human observer with a purposeful focus remains a thorough means of data collection.

Participant observation was an appropriate data collection tool for this quasi-experimental study. The researcher was able to gain an insider's perspective on the IBA Intervention, and such insights proved critical to the emic perspective that emerged from the participant's observation to help answer the qualitative research question (Merriam, 1998). Participant observation provided the researcher with a way to understand how participants constructed their understanding of the vocabulary, that is, how they made sense of their existing knowledge in relationship to a new, unknown vocabulary word and their understanding of that vocabulary word.

The researcher became a participant observer through the modeling of the targeted vocabulary strategies identified in the IBA Intervention. Several of the grade-level teachers wanted to observe CLD students' reaction to the strategies as well as learn the specifics of how the strategies are implemented. The researcher attended school events, staff meetings, and other functions involving the school staff. The researcher integrated herself into the school staff for the two months during which the IBA Intervention was implemented. The researcher spent 180 hours in the field during the data collection process.

Documents: Multiple Forms of Knowledge Expression

A document is "…any written or recorded material other than a record that was not prepared specifically in response to a request from the inquirer" (Lincoln & Guba, 1985, p. 277). The documents used for data collection purposes in this study were student artifacts and student writing samples. These documents enabled students to demonstrate learning using both linguistic and non-linguistic representations (Herrera, Murry, & Cabral, 2007). For the purposes of this study, student artifacts included any form of knowledge expression that documented a student's content and vocabulary knowledge.

Student writing samples were brief quick writes that allowed students the opportunity to pause momentarily during reading or discussion and record in writing their thoughts and feelings. These quick writes about vocabulary and concepts also provided students with an opportunity to check their use of vocabulary words. Teachers could then ask students to share their writings, confident that every member of the class had something to offer because each had been given the opportunity to grapple with the issue at hand.

Informal Interviews

Informal interviews were used with the grade-level teachers of the intervention group. Merriam (1998) states that interviewing of this type enables the researcher to "observe behavior, feelings, or peoples' interpretations" (p. 72). To get at the feelings and personal interpretations of the grade-level teachers involved in the study, informal interviews were used. These interviews helped the researcher gather descriptive data from the participants' point of view (Bogdan & Biklen, 1992).

The information gained from these informal interviews provided the researcher with valuable insights about the grade-level teachers' current instructional practice of vocabulary instruction and their implementation of the IBA Intervention. Upon completion of the study, the researcher was able to use information gleaned from the informal interviews to assess how each teacher's beliefs about vocabulary instruction changed over the duration of the study.

Means of Data Analysis

Data gathered from the MAP assessment and ESCRIBE were analyzed using quantitative analysis procedures. Qualitative analysis procedures were used to analyze data collected from participant observation, informal interviews and multiple forms of knowledge expression (emphasized in student artifacts and student writing samples).

Quantitative Data Analysis

Quantitative data analysis was used in this study to analyze the results of the MAP assessment and ESCRIBE.

MAP Assessment

The MAP assessment is a computerized, adaptive assessment program that provides educators with information they can use to improve teaching and learning. The assessment itself adapts to the student's ability, accurately measuring what a student knows and needs to learn. The MAP assessment is uniquely created for each student and reflects how he or she responds to given questions. Reading and math were the content areas that were being tested in the Baum Intermediate School. The MAP math test measures numeric reasoning, algebraic reasoning, geometry and measurement, and

quantitative reasoning. The MAP reading test measures decoding skills, vocabulary, understanding literacy text, understanding informative text, and skills needed to analyze and evaluate information. The scores from these subtests are combined to form a composite literacy index score for each student. For the purpose of this dissertation study, the researcher focused on the literacy index score because vocabulary has such an impact on students' overall reading comprehension (August & Hakuta, 1997). The composite literacy index score provided the most useful data on the overall impact of the IBA Intervention on the literacy achievement of students in the treatment group.

According to the MAP assessment testing manual, a participant's test results are scored on a single, continuous scale, called a RIT scale (Rasch UnIT), and the score is reported in RIT points or RITs. The RIT score is indicative of a student's current academic ability in the content areas of math and literacy. The student's individual RIT score is then placed on an overall academic continuum of learning to show student growth over time. RIT scores make it possible to follow a participant's academic growth from semester to semester and from year to year.

This study used an independent sample *t*-test to compare the change in RIT scores from the beginning to the end of the intervention as a function of whether students received the IBA Intervention or did not receive the IBA Intervention. More specifically, difference scores were computed by subtracting the pre-intervention RIT score from the post-intervention RIT score for all participants. Then, to test the hypothesis that the average difference for participants who received the intervention would not be significantly different than that for those who did not receive the intervention, the *t*-test was computed on the difference score.

ESCRIBE

Based on the ecobehavioral framework, ESCRIBE gives researchers the ability to conduct assessments and functional analyses of multi-language (e.g., ELL) instructional programs (Arreaga-Mayer, Carta, & Tapia, 1992; Arreaga-Mayer & Perdomo-Rivera, 1996). ESCRIBE weighs different student behaviors differently, depending on the student's language response at the time of the auditory cue. For example, the behavior of a student who is initiating language (e.g., asking a question or saying something that is not prompted) is weighed higher than that of a student who is neither initiating nor

responding to language. Thus, this study focused on information that was generated on variables such as language initiating/responding behavior (i.e., initiating, responding, and neither initiating nor responding), oral responses (i.e., talk academic, talk management, talk other, and no talk), and activity-related responses (i.e., writing, reading aloud, talk, other academic, student attention, reading silently, non-academic, and non-compliance). A point value was assigned to each of these variables. Table 3.8 details each ESCRIBE category providing a description of associated variables, the code assigned to each variable, and the point value attributed to each variable.

Table 3.8 *ESCRIBE Student Variables*

ESCRIBE Category: Language Initiating/ Responding Behavior	**Variable Descriptions** (Arreaga-Mayer, Carta, and Tapia (1992) provide these descriptions for each of these variables)	**Code**	**Point Value**
Initiating Language	Initiating language occurs when the verbal or written interaction is self-initiated. This interaction could be about academics or social topics (p. 41).	IL	2
Responding Language	Responding language occurs when the student's verbal and written interaction is in direct response to a teacher's or peer's behavior. This interaction could be about academic or social topics (p. 42).	RL	1
Neither Initiating nor Responding Language	Neither initiating nor responding language should be recorded when the target student is not engaged, verbally or in writing, in initiating or responding to an academic or social task (p. 42).	NIR	1
ESCRIBE Category: Oral Responses	**Variable Descriptions** (Arreaga-Mayer, Carta, and Tapia (1992) provide these descriptions for each of these variables)	**Code**	**Point Value**
Talk Academic	Talk academic is defined by those instances in which the student is observed verbalizing, singing, or signing about their academic subject/materials, teacher instruction or other appropriate topics (p. 42).	TA	2
Talk Management	Talk management is defined by those instances in which the student is observed verbalizing, singing, or signing and the substance of the conversation is not the academic activity or material but is about issues related to an academic task (p. 43)	TM	1
Talk Other	Talk other is defined by those instances in which the student is observed talking, singing, or signing to a peer or teacher about non-academic or non-management matters (p. 43).	TO	1
No Talk	No talk should be coded when the student is not engaged in verbal interaction (p.43).	NT	0
ESCRIBE Category: Activity- Related Responses	**Variable Descriptions** (Arreaga-Mayer, Carta, and Tapia (1992) provide these descriptions for each of these variables)	**Code**	**Point Value**
Writing	Writing defined by those instances in which the target student is observed	W	2

	marking academic task materials (p. 44).		
Reading Aloud	Reading aloud is defined by those instances in which the student is observed looking at materials like a book, worksheet, workbook, overhead chart or blackboard and reading aloud what is written (p. 44).	RA	2
Talk	Talk is defined by those instances in which the student is observed verbalizing, singing, or signing in response to the academic activity or material (p. 44).	T	2
Other Academic	Other academic is an active academic response that occurs when the target student makes a motor or manipulative response (p. 44).	OA	2
Student Attention	Student attention is defined by those instances when the student is observed looking directly at a teacher or a peer. It is a passive response of the student looking at a teacher or peer who is engaged in an academic task (p. 44).	SAT	1
Reading Silently	Reading silently is defined by those instances in which the student is observed looking at materials including a book, workbook, worksheet, computer screen or blackboard for at least 2 seconds and has eye movements indicating the student is scanning words, numbers, or letters (p. 44).	RS	1
Non-Academic	This variable contains those behaviors that are not a direct response to the instructional curriculum. It includes playing and/or interacting appropriately in non-academic activities approved by the teacher (p. 44).	N-A	0
Non-Compliance	Non-compliance behaviors are those which may be incompatible with academic responding, appropriate classroom conduct or classroom rules. N-C also include those instances when the student is observed engaged in inappropriate behaviors, refuses to respond to a directive and/or is away from the teacher's specified location (p. 44).	N-C	0

Students' language initiating/responding behaviors, oral responses, and activity-related responses over the course the observation periods were summed to create composite scores for each of these classroom behavior categories. Engagement was

operationally defined as the sum score of each student's score for language initiating/responding behaviors, oral responses, and activity-related responses. Average scores for each individual category and for engagement were calculated and compared as a function of whether students were in a control classroom or a treatment classroom, using a *t*-test.

Qualitative Data Analysis

In addition to the quantitative data collection and analysis, qualitative data was gathered and analyzed to respond to the qualitative research question. When analyzing participant observations, informal interviews, student artifacts, and student writing samples (i.e., multiple forms of knowledge expression), specific attention was given to participants' responses. In accord with Merriam (1998), the researcher collected the data and analyzed the data simultaneously. To ensure timely analysis of the incoming data throughout the investigation, the researcher analyzed the data using the constant comparative method. The constant comparative method assumes the processes of data collection, coding, analysis, and theorizing to be simultaneous, iterative, and progressive (Glaser & Strauss, 1967). As Erlandson et al. (1993) noted, "The analysis of qualitative data is best described as a progression, not a state; an ongoing process, not a one-time event" (p. 111). Using the constant comparative method, the qualitative data was purposively analyzed and differentiated by coding categories.

Etic coding was used to initiate the qualitative data analysis. Coding consists of descriptive labels, which identify relevant aspects of the material (Krathwohl, 1998). Coding according to the etic perspective (Geertz, 1974; Miles & Huberman, 1994) involved comparison and differentiation of qualitative data according to the substantive theoretical framework for this study. Coded data was then analyzed from an emic perspective (Geertz, 1974; Miles & Huberman, 1994). This perspective enabled the researcher to identify specific ways CLD students demonstrated vocabulary word retention. These demonstrations of retention constituted the major qualitative findings of the research.

Truth Value

All research must show that it has truth value. For a study to have truth value, the interpretation of data must accurately reflect what the participants reported (Erlandson et al., 1993). In this quasi-experimental study, the truth value of quantitative data collection and analyses was established through validity and reliability. On the other hand, trustworthiness criteria were the guidelines used to establish the truth value of the qualitative portion of this research (Lincoln & Guba, 1985). The trustworthiness of this study was established through credibility and transferability (Erlandson et al., 1993; Lincoln & Guba, 1985).

Quantitative Truth Value of the Research

Precision in a quantitative research study is expressed as validity and reliability. The following subsections establish the internal validity and reliability of the study.

Internal Validity

This study examined the relationship between the IBA Intervention and student engagement. Levine and Parkinson (1994) stated that internal validity refers to the probability of reaching the correct conclusions about the role of the intervention in the study. Krathwohl (1998) explained that internal validity must be able to address each component of the chain of reasoning: linking the current study to previous studies, rationale for the study, stated hypotheses, study design outlined, participants, treatments, measurements, and analysis of the data. Several measures were taken in this study to meet the criteria of internal validity: (a) a theoretical framework grounded in substantive research in vocabulary development for native English speakers and CLD students as well as processes of second language acquisition; (b) a solid rationale for the study highlighting connections to the components of effective vocabulary instruction in other studies; (c) articulated hypotheses; (d) a complete description of the study design; (e) a participant selection process that took into consideration three variables–age, native language, and level of English language proficiency; (f) a detailed explanation of the IBA Intervention; (g) descriptions of both quantitative and qualitative data collection tools; and (h) *t*-test used to test for differences between the two groups that existed before and after the intervention.

Reliability

Reliability refers to the consistency of the measure (Levine & Parkinson, 1994). To increase the reliability of this study, pre-intervention and post-intervention MAP assessment scores were collected and analyzed in this study. The MAP assessment is a norm-referenced test that shows individual academic growth. The MAP assessment consists of diagnostic tests designed to determine a student's ability level as well as the student's academic progress. Adequate testing time and a distraction-free testing environment was provided for all participants during assessment (Krathwohl, 1998). Each participant's score was shown in relation to a range of scores achieved by a norm group.

The ESCRIBE reliability program compared the coding of the researcher to that of a developer of the instrument. The first inter-rater reliability check yielded a reliability of 97.72%. The second inter-rater reliability check yielded a reliability of 98.57%. The third inter-rater reliability check yielded a reliability of 98.17%. The developers of ESCRIBE consider 85% inter-rater reliability acceptable (Arreaga-Mayer, Carta, & Tapia, 1992). The researcher demonstrated extremely high inter-rater reliability with a developer of the research instrument.

Qualitative Truth Value of the Research

The truth value of the qualitative data collection and analysis in this study was monitored according to trustworthiness criteria. Establishing trustworthiness ensures the quality of the research findings and increases the confidence of the reader that the findings are worthy of attention (Krefting, 1991). Two trustworthiness criteria that established appropriate standards for this study were credibility and transferability. According to Lincoln and Guba (1985), qualitative studies demonstrate reliability when the qualitative data demonstrates *credibility*; furthermore, qualitative studies demonstrate external validity when the qualitative data demonstrates *transferability*. A discussion of these two criteria follows.

Trustworthiness

Establishing trustworthiness ensures the quality of the research findings and increases the confidence of the reader that the findings are worthy of attention (Krefting, 1991). Two trustworthiness criteria that establish appropriate standards for this study are

credibility and transferability. According to Lincoln and Guba (1985), qualitative studies demonstrate reliability when the qualitative data demonstrates *credibility* and external validity is demonstrated through *transferability*.

Credibility

According to Erlandson et al. (1993), "A central question for any inquiry relates to the degree of confidence in the 'truth' that the findings of a particular inquiry have for the subjects with which–and the context within which–the inquiry was carried out" (p. 29). Thus the credibility of the study refers to the process of verifying the researcher's findings. The techniques used to address credibility in this study were: (a) triangulation and (b) fieldnotes (reflexivity) to ensure the trustworthiness of the study.

Triangulation.

One criterion of credibility is triangulation. The purpose of using triangulation is to establish consistency among the data (Lincoln & Guba, 1985). According to Lincoln and Guba (1985), triangulation consists of validating each piece of information against at least one other source. Participant observations, informal interviews, and documents (i.e., multiple forms of knowledge expression emphasized through student artifacts and student writing samples) comprised the qualitative data that was collected, analyzed, and used for triangulation. Patton (2001) stated: "Triangulation strengthens a study by combining methods. This can mean using several kinds of methods or data, including using both quantitative and qualitative approaches" (p. 247). Through triangulation of the qualitative data, the reliability of the study was increased (Lincoln & Guba, 1985; Merriam, 1998).

Fieldnotes.

Another technique to address credibility was the use of fieldnotes. Fieldnotes were gathered and analyzed by the researcher throughout the duration of study. The fieldnotes provided additional insight on the impact of the IBA Intervention on the CLD students participating in the study. The observational fieldnotes consisted of what Bogdan and Biklen (1992) described as "the written account of what the researcher hears, sees, experiences, and thinks in the course of collecting and reflecting on the data in a qualitative study" (pp. 110-111). The fieldnotes used in this study were both descriptive

and reflective of the vocabulary instruction in the classroom setting. Cooper and Kiger (2001) also described fieldnotes in terms of observation and further detailed the criteria for observing participants' behaviors: observation notes must be specific and include written documentation of what a participant does or says.

Transferability

The extent to which these qualitative findings have applicability in other contexts or with other participants is addressed by the transferability criterion used to establish trustworthiness. Addressing this criterion requires knowledge of both (a) the sending context (the context of the research) and (b) the receiving context (the context to which findings will be applied). The researcher's responsibility for such transferability lies in a *thick, rich description* of the sending context, including a thorough description of the time, place, and politics of the setting (Lincoln & Guba, 1985). Transferability may be achieved by providing sufficient detail relating to the purposive sample and findings. To enable others to apply the findings of this study to their own situations and make informed decisions, thick description of the experiences and vocabulary development of the participants was provided. The thick, rich description provided by the researcher will enable the reader to determine the value of the findings and evaluate the transferability of the findings to other contexts. In this study, a description of the context included discussion of the school site and participants involved, student interactions, vocabulary instruction, and academic vocabulary discourse.

Summary

This chapter discussed the methodology that was used in this quasi-experimental study. This chapter included a restatement of the research questions as well as a description of the research design, intervention, site selection, sampling, developing field relations, means of data collection, data analysis procedures, and truth value. Chapter Four presents the data results and analysis for this study. Descriptive statistics are presented to describe the effect of the IBA Intervention on fourth and fifth grade CLD students' literacy achievement and overall engagement level, thereby responding to the two quantitative research questions. The qualitative data headings are presented and explored in Chapter Four in response to the qualitative research question for this study.

Links to the theoretical foundation and literature review are included in the discussion of the quantitative and qualitative data analysis and findings.

Chapter 4 - FINDINGS

This chapter presents and discusses the findings for each of the three research questions explored in this quasi-experimental study. This study was conducted to discover the effect of the IBA Intervention, which is based on the IBA Framework, on the vocabulary development of CLD students. Through the collection and analysis of the quantitative and qualitative data, the outcomes of the IBA Intervention were determined. Data analysis was carried out according to the methodological protocols outlined in Chapter Three. In order to enable maximum clarity in research reporting, the following sequence of reporting is followed for each of the quantitative research questions: (a) description of data collection tools; (b) description of data analysis; (c) findings; and (d) discussion. Reporting for the qualitative research question follows a similar sequence but begins with a discussion of the instructional context.

This quasi-experimental study was undertaken to answer the following research questions:

Quantitative Research Question One:

To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' literacy achievement as measured by the Measures of Academic Progress (MAP) assessment?

Quantitative Research Question Two:

To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' engagement as measured by the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE)?

Qualitative Research Question:

In what ways does implementation of the IBA Intervention, which is based on the IBA Framework, affect CLD students' retention of vocabulary?

The following section details the findings and discussion related to the first quantitative research question using data from the MAP assessment tool.

Quantitative Research Question One

The first research question asked, "To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' literacy achievement as measured by the Measures of Academic Progress (MAP) assessment?" The MAP assessment was the data collection tool used to answer this research question and is described in the section to follow.

Data Collection Tool: Quantitative Research Question One

The MAP assessment is a standardized assessment tool that was used to measure the CLD students' overall literacy achievement in English. The MAP assessment was developed by the Northwest Evaluation Association (NWEA) and is a computer-adaptive, norm-referenced test that is aligned to the content and structure of individual state standards. In the area of reading, the MAP assessment measures decoding skills, vocabulary, understanding literacy text, understanding informative text, and skills needed to analyze and evaluate information. The scores from these subtests are combined to form a composite literacy score for each participant. The composite literacy index provided the most useful data on the overall impact of the IBA Intervention on the literacy achievement of the participants in the treatment group. For the purpose of this dissertation study, the researcher focused on the overall literacy composite score, since vocabulary has such an impact on students' overall reading comprehension (August & Hakuta, 1997). The researcher analyzed the pre-intervention and post-intervention composite scores to determine differences between the control and treatment groups in this study.

Data Analysis: Quantitative Research Question One

According to the MAP assessment testing manual, participants' test results are scored on a single, continuous scale, called a RIT (Rasch UnIT) scale, and the score is reported in RIT points or RITs. The RIT scale is used to measure participants' achievement and individual growth. All the computer-based test questions are generated from a bank of potential questions corresponding in difficultly to a particular RIT score. The RIT score is indicative of a participant's current academic ability. The participant's

individual RIT score is then placed on an overall academic continuum of learning to show the student's growth over time.

This study used an independent sample *t*-test to compare the change in RIT scores from the beginning to the end of the intervention as a function of whether participants received the IBA Intervention or did not receive the IBA Intervention. More specifically, evaluation scores were computed by subtracting the pre-intervention RIT score from the post-intervention RIT score for all participants. Then, to test the null hypothesis that there would be no difference in literacy achievement (as demonstrated in the change from the pre-intervention to the post-intervention MAP assessment scores) between the treatment group and the control group, the *t*-test was computed on the evaluation scores.

Findings: Quantitative Research Question One

The MAP assessment scores were collected for each student participant prior to the intervention and following the intervention and these scores apply to the first quantitative research question: *To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' literacy achievement as measured by the Measures of Academic Progress (MAP) assessment?* An evaluation score was computed for each participant by subtracting his or her pre-intervention MAP score from his or her post-intervention MAP score. Table 4.1 presents the composite descriptive data related to the treatment and control groups that was gathered from the MAP assessment used in this study.

Table 4.1 *Mean MAP Scores and Standard Deviations*

	Number of Students	**Pre-Intervention Test Scores**		**Post-Intervention Test Scores**		**Change in Evaluation Test Scores Overtime**	
		Mean	**Standard Deviation**	**Mean**	**Standard Deviation**	**Mean**	**Standard Deviation**
Treatment Group	15	198.07	12.63	204.33	12.83	6.27	1.79
Control Group	15	199.13	15.47	203.47	15.95	4.33	1.18

After calculating the evaluation score for each participant, these scores were submitted to a *t*-test to determine whether there was a statistically significant difference in an evaluation score as a function of experimental group (control vs. treatment group). The composite scores from pre-intervention and post-intervention test scores on the MAP test were analyzed using the Statistical Package for the Social Sciences (SPSS), Version 13.0. An independent sample *t*-test was conducted to ascertain the relationship between the IBA Intervention and CLD students' literacy achievement. For this study, all results with an error value (*p* values) .05 or less were considered statistically significant. According to Keppel and Wickens (2004), setting the maximum permissible at 5% is standard for most studies.

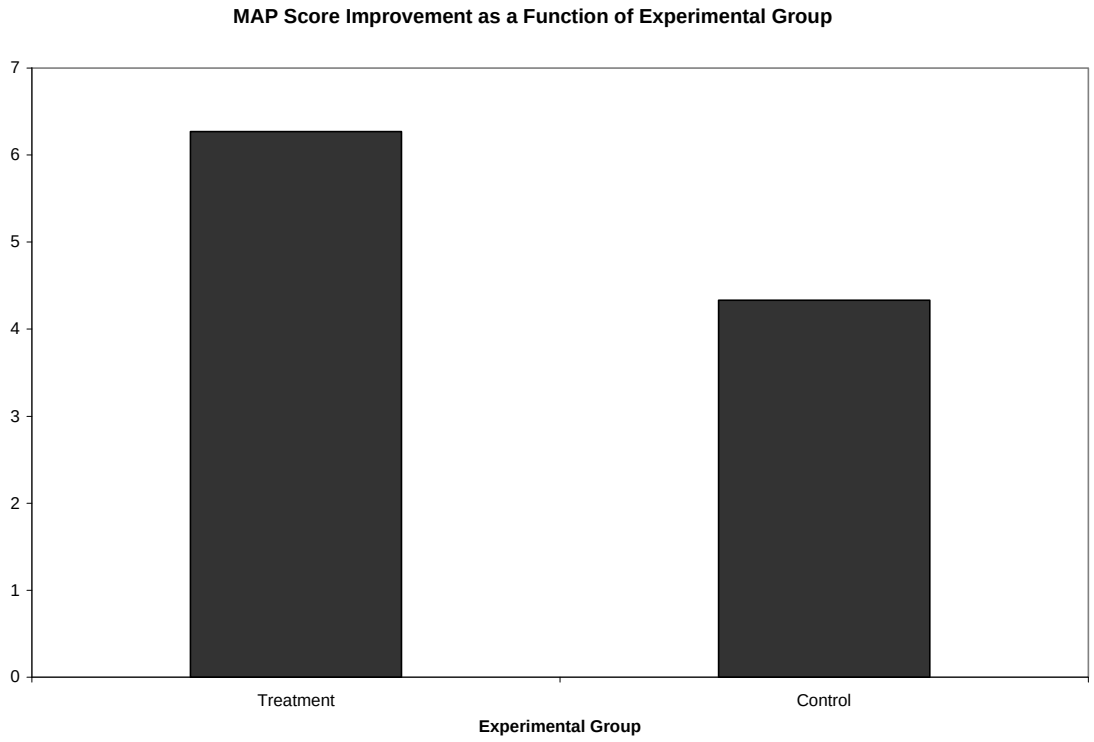
Prior to conducting the independent *t*-test to compare the pre-intervention with the post-intervention MAP assessment scores as a function of treatment group, the homogeneity of variance assumption (i.e., the assumption that variance within groups is similar) was investigated using Levene's Test for Equality of Variance. The homogeneity of variance assumption was met, as the Levene's Test was non-significant ($F = 0.86$, $p > .05$). The results indicate that the variances observed within the control and the treatment groups were similar and did not affect the statistical analysis of the MAP assessment tool used to answer this research question.

Participants of both groups demonstrated gains in MAP assessment scores from pre-intervention to post-intervention (control group $M = 4.33$, $SD = 1.18$, $N = 15$ compared with treatment group $M = 6.27$, $SD = 1.79$, $N = 15$). Nevertheless, there was a

significant difference in MAP evaluation scores as a function of treatment group [t (28) = 3.50, p = .002].

Thus, the CLD students whose grade-level teachers applied the targeted vocabulary strategies through the IBA Intervention demonstrated additional improvement over what would ordinarily be expected for students whose grade-level teachers did not apply the targeted vocabulary strategies of the IBA Intervention. (Please see Chapter Three for a detailed discussion of the distinctions between literacy instruction provided by teachers to participants of the control and treatment groups.) Figure 4.1 compares the mean gain scores for both the treatment group and the control group of the MAP evaluation score.

Figure 4.1 MAP score improvement as a function of experimental group.



Discussion: Quantitative Research Question One

The first quantitative research question was answered using an independent *t*-test with the following null hypothesis posed: *There will be no difference in literacy achievement, as demonstrated in the change from the pre-intervention to post-intervention MAP assessment scores, between the treatment group and the control group.* This null hypothesis was rejected because there was a statistically significant difference in evaluation scores resulting from the MAP assessment as a function of treatment or control group [t (28) = 3.50, p = .002].

The IBA Intervention was based on the IBA Framework, which emerged from an extensive review of the literature on vocabulary instruction and second language acquisition and was developed as the substantive theoretical framework for this study. (Please see Chapter Two for a detailed description of the IBA Framework.) Analysis of MAP assessment data indicates that both the treatment group and control group demonstrated gains in literacy achievement. This suggests that some improvement in

MAP assessment scores would be expected as students mature and progress through their grade-level curriculum. However, gains on the MAP assessment demonstrated by the treatment group were larger than those demonstrated by the control group. The treatment group had explicit vocabulary instruction in which their existing knowledge was activated and they were actively engaged throughout the vocabulary instruction. These findings support the literacy research contending that vocabulary knowledge is highly correlated with standardized achievement test scores (Anderson & Nagy, 1992). Moreover, vocabulary knowledge has been found to be a critical factor in the academic success of CLD students (Folse, 2004; Nation, 2001; Proctor, Carlo, August, & Snow, 2005). The results of the MAP assessment in this research are a positive indicator that the IBA Intervention improved the literacy achievement of CLD students in the treatment group. The IBA Framework provided the context needed for CLD students to make greater strides toward closing the academic achievement gap.

The following section addresses the findings and discussion related to the second quantitative research question. The data collection of this research question involved the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE) data collection tool. A description of this tool is provided in the section to follow.

Quantitative Research Question Two

The second quantitative research question asked, "To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' engagement as measured by the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE)?" ESCRIBE allowed the researcher to track the level of CLD student engagement during the vocabulary instruction time.

Data Collection Tool: Quantitative Research Question Two

This study used ESCRIBE to measure the level of engagement of the CLD students during vocabulary instruction. ESCRIBE is a computerized data collection tool and observation analysis system for CLD students. ESCRIBE was developed in the early 1990s by Carmen Arreaga-Mayer, Judith Carta, and Yolanda Tapia of the Juniper Gardens Research Center. ESCRIBE is described as "an observable coding system for the

evaluation of instructional programs serving special education and mainstream culturally and linguistically diverse learners" (Arreaga-Mayer, Carta, & Tapia, 1992, p. 2). This data collection technique allowed the researcher to record what happened at a given point in time over a specified duration of time. This study used a momentary time sampling of 15 seconds for each 30 minute observation. The ESCRIBE program provides an auditory cue at the beginning of every 15 second interval. At the moment the cue sounds, the researcher notes what is occurring in connection to the coding category that ESCRIBE indicates is the focus for the moment's data collection. The researcher then enters the codes related to what happened at the moment the auditory cue sounded (Arreaga-Mayer, Carta, &Tapia, 1992).

Data Analysis: Quantitative Research Question Two

In this study, engagement was defined as the active process where CLD students are active in and accountable for academic learning through vocabulary strategies that access background and prior knowledge using meaningful interactions that build upon and extend the students' English language skills and target vocabulary knowledge. The ESCRIBE research instrument was used in this study to measure the students' engagement level during vocabulary instruction. Although the researcher coded during each cycle for the instructional environment variables, teacher variables, and student variables, only the coding of the student variables was used to calculate the students' engagement level. ESCRIBE classifies student behaviors under four different categories of variables: language initiating/responding behaviors, oral responses, student language, and activity-related responses (Arreaga-Mayer, Carta, &Tapia, 1992). (Please note that Chapter Three provides a detailed description of each of these categories.) The researcher combined the language initiating/responding behaviors, oral responses, and activity-related responses to get an overall students' engagement score. In this study, the student language category was not investigated because during the ESCRIBE observations, the students' oral and written responses were produced in English. For each group (control group or treatment group), average student scores on each individual category (language initiating/responding behaviors, oral responses, and activity-related responses) were calculated, and these average scores were then combined to yield an overall students'

engagement score for each group. Each CLD student participant in this study was observed multiple times in the literacy blocks, so each individual session was treated as an independent observation for a total of 68 independent observations (control *N*=28, treatment *N*=40), each lasting 30 minutes.

Findings: Quantitative Research Question Two

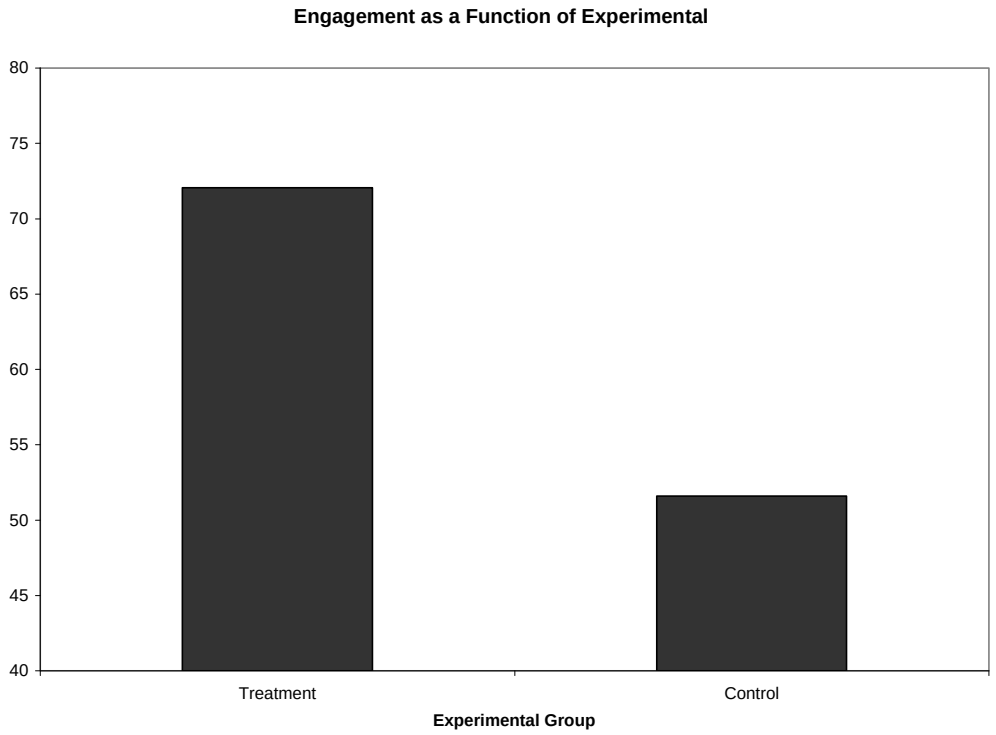
The findings detailed in this section relate to the second quantitative research question: *To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' engagement as measured by the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE)?* The first subsection details the findings from the overall students' engagement score for each group. The findings related to the variable categories of language initiating/responding behaviors, oral responses, and activity-related responses are discussed separately in subsequent subsections.

Engagement Findings

The researcher looked at the students' overall engagement score for both the treatment group and the control group. Prior to conducting the independent *t*-test to compare students' behaviors in the treatment group and the control group in relation to use of the ESCRIBE data collection tool, the homogeneity of variance assumption (i.e., the assumption that the variance within groups is similar) was investigated using Levene's Test for Equality of Variance. The homogeneity of variance assumption was not met, as the Levene's Test was significant ($F = 6.54$, $p = .013$). This indicates that the homogeneity of variance assumption was violated, so the *t*-value associated with unequal variances is reported. Because the variance assumption was violated, the robustness of the statistical test was affected.

The independent *t*-test revealed a significant difference in engagement between the treatment group and the control group, [$t\ (45) = 5.39$, $p < .0001$]. That is, the mean engagement level of students in the treatment group ($M = 72.05$, $SD = 12.14$) was significantly higher than the mean engagement level of students in the control group ($M = 51.61$; $SD = 17.32$). Figure 4.2 compares the mean difference between the engagement level of students in the treatment group and that of students in the control group.

Figure 4.2 Engagement as a function of experimental group.



The following subsections detail the findings related to the three categories of student variables that comprise the overall students' engagement score. Disaggregating the three different categories provides additional insight into the students' engagement in vocabulary instruction.

Language Initiating/Responding Behavior Findings

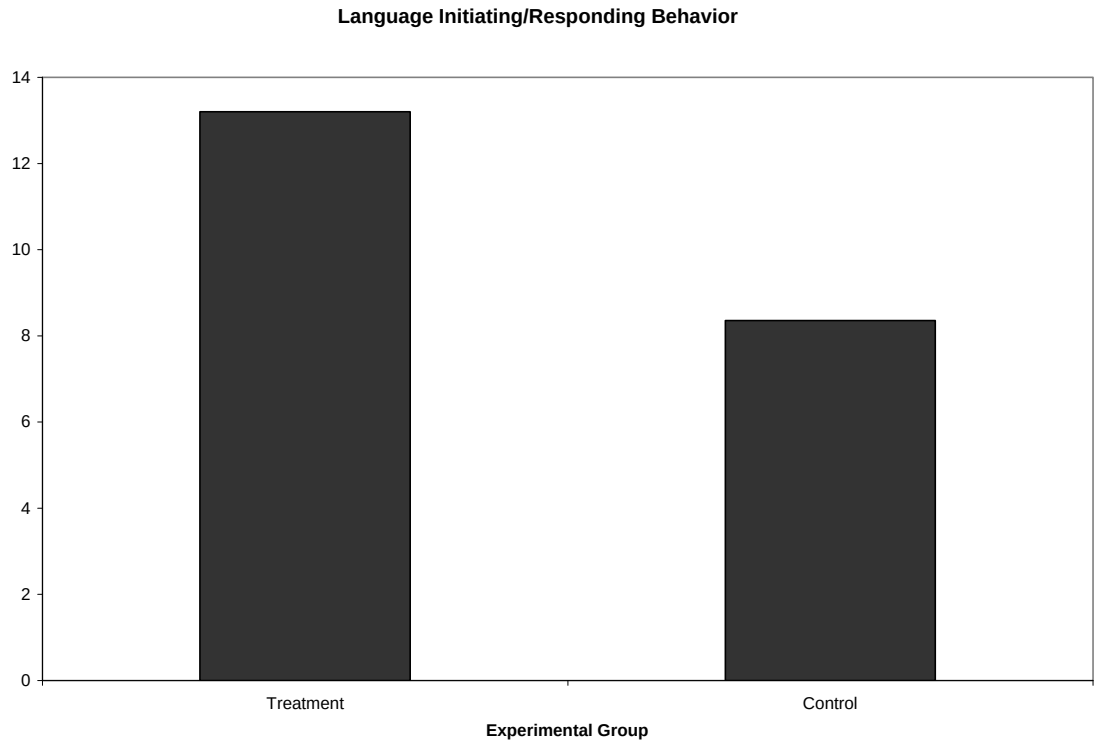
Language initiating/responding behaviors encompass three variables: initiating language, responding language, and neither initiating nor responding language. Chapter Three provides a detailed description for each of these variables and the point value assigned to each variable. The students' language initiating/responding behaviors were coded over 30 times in a single observation. The students' language initiating/responding behaviors were scored and summed using the ESCRIBE coding system.

Prior to conducting the independent *t*-test to compare students' language initiating/responding behaviors in the treatment and control group using the ESCRIBE data collection tool, the homogeneity of variance assumption was investigated using Levene's Test for Equality of Variance. The homogeneity of variance assumption was

met, as the Levene's Test was non-significant ($F = 0.47$, $p > .05$). The results signify that the variance among the control and the treatment groups is similar and did not affect the statistical analysis of the ESCRIBE results used to answer this research question.

The independent *t*-test revealed a statistically significant difference in language initiating/responding behaviors between the treatment group and the control group, [t (66) = 3.63, p = .001]. The mean language initiating/responding behaviors score for students in the treatment group (M = 13.20; SD = 5.05) was significantly higher than the mean language initiating/responding behaviors score for students in the control group (M = 8.36; SD = 5.900). Figure 4.3 compares the mean difference between the language initiating/responding behaviors of students in the treatment group and those of students in the control group.

Figure 4.3 Language initiating/responding behavior as a function of experimental group.



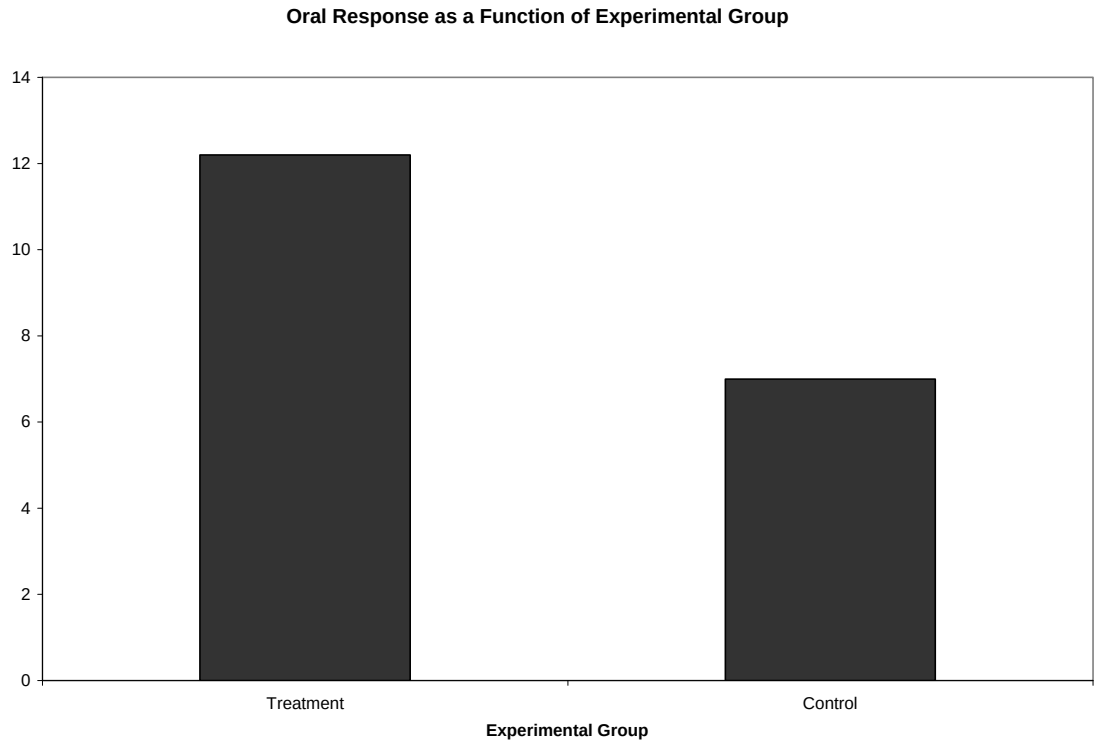
Oral Response Findings

Oral responses include four variables: talk academic, talk management, talk other, and no talk. Chapter Three provides a detailed description for each of these variables and the point value assigned to each variable. Over the course of one individual observation, the students' oral responses were coded over 30 times. The students' oral responses were scored and summed using the ESCRIBE coding system.

Prior to conducting the independent *t*-test to compare students' oral responses in the treatment and control group using the ESCRIBE data collection tool, the homogeneity of variance assumption was investigated using Levene's Test for Equality of Variance. The homogeneity of variance assumption was met, as the Levene's Test was non-significant ($F = 0.29$, $p > .05$). The results indicate that the variance among the control and the treatment groups is similar and did not affect the statistical analysis of the ESCRIBE results used to answer this research question.

The independent *t*-test revealed a statistically significant difference in oral responses between the treatment group and the control group [t (66) = 3.31, p = .002]. In particular, the mean oral response score for students in the treatment group (M = 12.20, SD = 6.12) was significantly higher than the mean oral response score for students in the control group (M = 7.00, SD = 6.75). Figure 4.4 compares the mean difference between the oral responses of students in the treatment group and those of students in the control group.

Figure 4.4 Oral response as a function of experimental group.



Activity-Related Response Findings

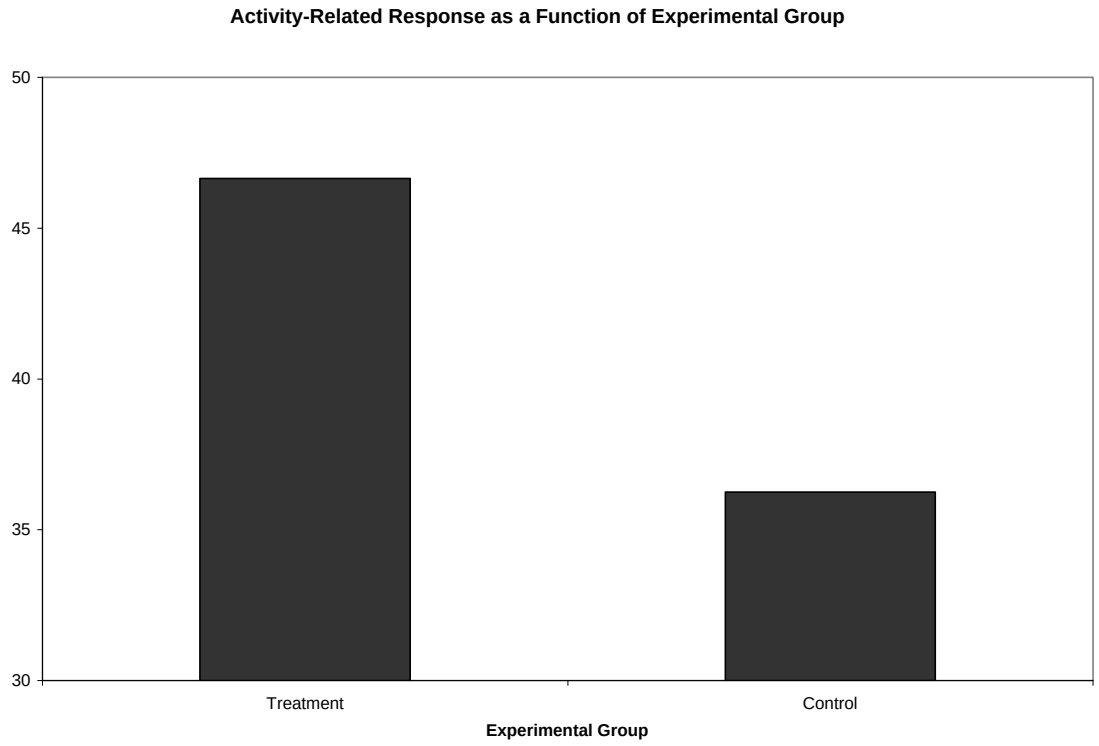
The final category of student behaviors was activity-related responses. This category included eight variables: writing, reading aloud, reading silently, other academic, non-academic response, non-compliance, and student attention. Chapter Three provides a detailed description for each of these variables and the point value assigned to each variable. Over the course of one individual observation, the students' activity-related responses were coded over 30 times. The students' activity-related responses were scored and summed using the ESCRIBE coding system.

Prior to conducting the independent *t*-test to compare students' activity-related responses in the treatment and control group using the ESCRIBE data collection tool, the homogeneity of variance assumption was investigated using Levene's Test for Equality of Variance. The homogeneity of variance assumption was not met, as the Levene's Test was significant ($F = 7.86$, $p = .007$). This indicates that the homogeneity of variance assumption was violated, so the *t*-value associated with unequal variances is reported.

Because the variance assumption was violated, the robustness of the statistical test was affected.

The independent *t*-test revealed a statistically significant difference in activity-related responses between the treatment group and the control group [t (43) = 6.38, p <.001]. Specifically, the mean activity-related response score for students in the treatment group (M = 46.65, SD = 4.93) was significantly higher than the mean activity-related response score for students in the control group (M = 36.25; SD = 7.57). Figure 4.5 compares the mean difference between the activity-related responses of students in the treatment group and those of students in the control group.

Figure 4.5 Activity-related response as a function of experimental group.



Discussion: Quantitative Research Question Two

The second quantitative research question was answered using an independent *t*-test with the following null hypothesis posed: *There will be no significant difference in the student engagement, as demonstrated by ESCRIBE scores, between the treatment group and the control group.* This null hypothesis, which stated that there would be no difference in the engagement level of the CLD students in the treatment group compared to the engagement level of students in the control group was rejected. The null hypothesis was rejected because there was a statistically significant difference in the students' level of engagement in the treatment group compared to the students' level of engagement in the control group [t (45)=5.39, p =. 0001]. In addition, there was a statistically significant difference in each of the individual student variables categories: for language initiating/responding behaviors [t (66) = 3.63, p =. 001]; for oral responses [t (66) = 3.31, p =. 002]; and for activity-related responses [t (43) = 6.38, p =. 001]. Table 4.2 presents the ESCRIBE scores related to the treatment and control groups for each of the student variable categories and for the overall students' engagement level.

Table 4.2 *Mean ESCRIBE Scores, Standard Deviations, and t-test Results*

ESCRIBE Category	**Treatment Group** Mean Score Standard Deviation Number of Observations	**Control Group** Mean Score Standard Deviation Number of Observations	***t*-test Result** *t* - value Degrees of Freedom *p* - value
Engagement	72.05 12.14 40	51.61 17.32 28	5.39 45* .0001
Responding Behavior	13.20 5.05 40	8.36 5.90 28	3.63 66 .001
Oral Response	12.20 6.11 40	7.00 6.75 28	3.31 66 .002
Activity-Related Response	46.65 4.93 40	36.25 7.57 28	6.38 43* .0001

*Degrees of Freedom are adjusted to account for unequal variances as determined by a significant Levene's Test for Equality of Variances result.

The overall students' engagement score of the treatment group was significantly higher than that of the control group, which indicates that the IBA Intervention had a positive effect on the engagement level of CLD students in the treatment group. The IBA Intervention, which was based on the IBA Framework, incorporated targeted vocabulary strategies that purposefully accessed and built upon students' prior and background knowledge and increased the students' engagement with the vocabulary words. Students were provided with opportunities to be actively engaged with the vocabulary in meaningful ways. In addition, students were provided with the necessary multiple exposures needed to reach a higher level of vocabulary word retention. At the same time, the grade-level teachers addressed the CLD students' sociocultural needs. All these components of the IBA Framework ensured a learning context that encouraged a higher level of engagement for CLD students in the treatment group.

Lenski et al. (2003) describes active engagement as "involving students in class discussions that incorporate new vocabulary and providing opportunities for students to apply the new acquired vocabulary to different situations" (p. 46). Throughout the IBA Intervention, CLD students were engaged in both class discussions of the new vocabulary

words and incorporating the new vocabulary in reading and writing contexts. As the ESCRIBE data indicated, the treatment group was far more actively engaged with the vocabulary words than the control group. Data collected from the treatment group in the variable category of language initiating/responding behavior was indicative of the kind of active student engagement that not only enhances the learning experience but also motivates students about learning vocabulary words (Richek, 2005). Such student engagement ensures mental processing in learning and builds high interest in future vocabulary words (Scott & Nagy, 1997). ESCRIBE data collected in the oral response category indicated that students in the treatment group were engaged in meaningful discussions. Furthermore, data collected in the activity-related response category indicated that students in the treatment group engaged in multiple meaningful uses of the vocabulary words. Taken together, the ESCRIBE data collected in this study supported the substantive theoretical framework from which the IBA Intervention was derived.

For vocabulary instruction to have a lasting impact, CLD students must become actively engaged so that generative thinking can occur (Reutzel & Cooter, 2003). This lasting impact is explored through the qualitative data collected throughout the IBA Intervention. The following section discusses the qualitative data analysis procedures undertaken in this quasi-experimental study.

Qualitative Research Question

This study proposed to answer the following qualitative research question: *In what ways does implementation of the IBA Intervention, which is based on the IBA Framework, affect CLD students' retention of vocabulary?* As previously discussed, the instructional context must provide the conditions necessary for CLD students to become engaged in vocabulary instruction in ways that lead to word retention. The following subsection describes the instructional context in this study that set the stage for students' retention of vocabulary.

Setting the Stage for Vocabulary Retention

In the "before" phase of vocabulary instruction, CLD students in the intervention group had opportunities within each targeted vocabulary strategy to activate their prior and background knowledge about the new, unknown vocabulary words they were about

to learn. The new, unknown vocabulary word was listed on a piece of paper or visually displayed for all the students to see. The students were then guided to activate and record their thoughts or understandings of the particular vocabulary word highlighted from the story in the anthology. This activation of knowledge provided CLD students with an anchor for their continued exploration of vocabulary word meanings. Students were able to use linguistic or non-linguistic representations to document their existing knowledge, prior experiences, or perceptions related to the vocabulary words. These multiple forms of knowledge expression documents were created by students as a result of their participation in the targeted vocabulary strategies. Students were able to express their understandings of the vocabulary words in a way that was meaningful. In using their own words, students were actively engaged with the vocabulary and encouraged to take ownership of their learning. In activating the students' prior and background knowledge, the targeted strategies provided students with a platform for voicing their thoughts and understanding while giving the teacher a starting point for bridging from students' known knowledge to the unknown vocabulary. The significance is that all students, regardless of their English language proficiency, were able to express their existing knowledge through writing in their native language or English or through drawing.

In each of the targeted vocabulary strategies, students were individually responsible for recording their own answers. To make individual accountability possible, each student in the group was assigned a color, which allowed the teacher to know which student was recording which specific pieces of information about a given vocabulary word. If students did not have any existing knowledge about a new vocabulary word, they were to rewrite the unknown word. Students were allowed to access their cultural and linguistic backgrounds as they created meaningful understandings of the new, unknown vocabulary words. The grade-level classroom teachers created classroom conditions that allowed students to access their cultural and linguistic backgrounds as they created meaningful understandings of the new, unknown vocabulary words. By incorporating the use of the students' native language and culture during academic instruction, the grade-level teachers supported and validated students' knowledge of the vocabulary words, regardless of the language in which the knowledge was presented. The grade-level teachers were then able to build upon this knowledge base and help students transfer this

information from the native language to English, thus building from the known to the unknown.

The grade-level teachers established an atmosphere in which CLD students were held to high expectations in a positive learning environment that supported students' needs, validated alternative cultural perspectives, and promoted a sense of belonging (Waxman & Tellez, 2002; Wong Fillmore, 2000). The more that instruction draws upon real-life experiences of CLD students, thus allowing them to access their background knowledge, or allows non-linguistic representations, the easier it is for students to demonstrate what they know and can produce. These experiences and existing knowledge then serve as starting points for making vocabulary meaningful (Lachat, 2004). Because the grade-level teachers built off students' cultural frames of reference and genuine experiences, they increased CLD students' opportunities for academic success.

The activation of students' prior and background knowledge in the "before" phase of vocabulary instruction provided the grade-level teachers with a point of departure for teaching the vocabulary words of the weekly story selected from the students' anthology. The grade-level teachers' understanding of the critical role that activating existing student knowledge plays in literacy development linked directly to the substantive theoretical framework for this quasi-experimental study.

In the "during" phase of instruction, students used the vocabulary words in meaningful ways, which encompassed reading, writing, listening, and speaking the targeted vocabulary during meaningful use, and received multiple exposures to the words. As students interacted with the text, the grade-level teachers continually provided comprehensible input and scaffolded support to promote CLD students' understanding of the vocabulary. Such efforts also enabled students to maintain a high level of engagement in the vocabulary instruction.

In the "during" phase of vocabulary instruction, the grade-level teacher built connections between the key vocabulary and the information that was gathered about the students' prior and background knowledge, as revealed in the "before" phase of vocabulary instruction. As students read the story or listened to peers read aloud, they placed a sticky note that was cut into pieces, called "fingers," on the vocabulary words located on the page. The teacher then revisited the highlighted vocabulary words in the

text to extend the CLD students' knowledge base. Because they had to explicitly identify the vocabulary words on the page, the students were able to develop a deeper understanding of the role these vocabulary words played in the story. In extending their knowledge, students engaged in a collaborative discussion with their grade-level teacher and peers about the identified vocabulary and a given word's meaning in the story compared to their existing understanding of the word. The teacher encouraged students to start thinking and talking about and anticipating the reading. This type of discussion is critical to setting the scene for CLD students who might encounter new language structures and new vocabulary during reading.

While students were engaged in a vocabulary strategy, the grade-level teachers continually monitored the students' understanding of the vocabulary words in order to clarify when necessary and eliminate any confusion that could interfere with the students' correct use of the words in the specific contexts. The grade-level teachers engaged students in discussions of the vocabulary, building on connections to the students' existing knowledge. By observing the students, the teachers were able to gauge the depth of the students' comprehension of the words' meanings. Students also went back to their initial work samples and added new information about the vocabulary words. These word discussions and this explicit attention to the vocabulary words in the text helped support students' integration of the new vocabulary and concepts into their existing knowledge to help expand their vocabulary in a meaningful way.

Students need multiple opportunities over an extended period of time to encounter a new term in a variety of authentic contexts. They need to read, hear, write, and speak it, so that the word is internalized and becomes part of their usable vocabularies. The CLD students were able to make critical connections with the vocabulary through continued meaningful and multiple exposures, which enabled them to work with the words in their working memory. True word knowledge involves a complex process of integrating new words with ideas that exist in the schema of the reader (Greenwood, 2002). Through multiple encounters with the words in meaningful contexts, the students were able to successfully promote the words to their permanent memory (Nation, 2003), which is the overall goal of vocabulary development.

To summarize, the CLD students were able to activate their personal connections to their prior and background knowledge. The students were then able to use this information to enhance and extend meaning constructions of the targeted vocabulary in connected text. In reading, when a student's prior or background knowledge interacts with the text, it allows the students to construct new knowledge (Wilson & Anderson, 1986). In addition to making connections through writing and drawing their understandings, students were exposed to rich conversations that surrounded the vocabulary words and connections that had been made to the words' meanings. When students develop these connections, they feel personally connected to the vocabulary and have an increased chance for developing ownership of the vocabulary they are learning (Blachowicz & Fischer, 2000). During the lesson, the grade-level teachers either intentionally scaffolded the vocabulary through connections with the text or had the students locate the vocabulary in the pages that had been previously read aloud. The students then discussed a vocabulary word's meaning as it was found in context. The students were able to think about their previous understandings of the vocabulary words and clarify and extend their vocabulary repertoire. They were able to articulate and benefit from multiple perspectives on the vocabulary without barriers. The teachers were able to instruct the students on how to use the text as an additional resource to gain understanding of a vocabulary word's meaning.

For the purpose of this study, the first two phases of vocabulary instruction set the conditions to address the following research question: *In what ways does implementation of the IBA Intervention, which is based on the IBA Framework, affect CLD students' retention of vocabulary?* The following section describes the "after" phase of vocabulary instruction, which provides evidence of students' vocabulary retention.

Retention in the "After" Phase of Vocabulary Instruction

In the "after" phase of instruction, students were able to demonstrate their accumulated knowledge of the vocabulary words that they had retained. In this phase of vocabulary instruction, the grade-level teacher assessed the vocabulary knowledge of CLD students that had been accumulated during the previous phases of vocabulary instruction. The students were given time to process the information that they learned and

consider how the new knowledge integrated with their previously learned information. They continued to make connections between their foundational, existing knowledge and their developing understanding of the nuances of the words. By articulating their knowledge, students were able to practice academic language. Through the sharing of their knowledge with peers, students were able to see how diverse perspectives added to their overall understanding of the words and their meanings in a variety of contexts. This reflection allowed the CLD students to fully demonstrate their understanding of the new vocabulary while making associations with existing knowledge. During this "after" phase of instruction, the teacher was able to assess whether the CLD students had reached a higher level of retention and knowledge of the vocabulary words.

The substantive theoretical IBA Framework provided grade-level teachers with a guiding template for providing vocabulary instruction for CLD students that took into consideration the characteristics of effective vocabulary instruction as well as the processes of second language acquisition. To investigate the impact of the IBA Intervention on CLD students' vocabulary retention, the researcher ensured triangulation of the data by employing the following data collection tools: multiple forms of knowledge expression documented through student artifacts and student writing samples, participant observation, and informal interviews.

Data Collection Tools: Qualitative Research Question

Three tools were employed to gather the qualitative data used to determine the effect of the IBA Intervention on CLD students' vocabulary retention. First, data was collected through documents that demonstrated students' multiple forms of knowledge expression. The two forms of documents were student artifacts and student writing samples. These documents enabled students to demonstrate learning using both linguistic and non-linguistic representations (Herrera, Murry, & Cabral, 2007). The documents were collected weekly throughout the study. Second, data was collected through participant observations. These observations allowed the researcher to be a part of the vocabulary instruction context (Bogdan & Biklen, 1992). Participant observations were conducted daily throughout the duration of the study. Third, data was collected through informal interviews. The teachers were interviewed using an informal format on a weekly

basis. Through the triangulation of these sources of qualitative data, the credibility of this quasi-experimental study was increased. Rhodes and Shanklin (1993) noted that data triangulation provides a “fuller, richer, and more trustworthy picture” (p. 21).

Data Analysis: Qualitative Research Question

The researcher initially used etic coding to distinguish the excerpts that came from the data collection tools. Data was gathered from student documents demonstrating multiple forms of knowledge expression, participant observations, and informal interviews resulting from implementation of targeted vocabulary strategies in the before, during, and after phase of vocabulary lessons. Etic codes were assigned to attribute meanings and patterns to the data collected (Geertz, 1974; Miles & Huberman, 1994). Table 4.3 summarizes the etic codes that were used throughout the data collection process.

Table 4.3 *Etic Codes Used to Analyze Qualitative Data*

Multiple Form of Knowledge Expression Documents ❖ Student Work Artifact (SWA) ❖ Student Writing Sample (SWS)	**Vocabulary Strategy**	**Before Phase**	**During Phase**	**After Phase**	**Student/Teacher Classroom**
	DOTS	DB	DD	DA	Each student was identified by a number, and each grade-level classroom was identified by a two-letter code.
	Word Splash	WSB		WSA	
	Vocabulary Quilt	VQB	VQD	VQA	
	Linking Language	LLB	LLD		
	U-C-Me	UCMB	UCMD	UCMA	
	Mind Map	MMB	MMD	MMA	
Participant Observation (PO)	Vocabulary Foldable	VFB	VFD	VFA	
Informal Interview (II)	Rivet Books	RBB	RBD	RBA	
	Tic-Tac-Tell			TTTA	

SWA indicated a student work artifact, **SWS** indicated a student writing sample, **PO** indicated a participant observation, and **II** indicated an informal interview. The targeted strategies (i.e., DOTS = **D**; Word Splash = **WS**; Vocabulary Quilt = **VQ**; Linking Language = **LL**; U-C-Me = **UCM**; Mind Map = **MM**; Vocabulary Foldable = **VF**; Rivet Book = **RB**; Tic-Tac-Tell **= TTT**) were qualified by the phase of instruction (i.e., before = **B**; during = **D**; after = **A**) in which they were implemented. For example, the code **DB** indicated that the excerpt was from the DOTS strategy in the "before" phase of the vocabulary lesson. At the end of the code, participants were identified by a number, and their classrooms were identified by a two-letter code. For example, the code **1-CA** indicated that the excerpt came from the individual student with the identification number of one (1) and that the student was a participant in the grade-level classroom **CA**. An example of a complete code for an excerpt would then be **PO-WSD-1-CA**.

Based on the initial etic coding, the emic categories emerged from the data analysis. The emic categories were derived from the participant/teacher voice evident in student documents demonstrating multiple forms of knowledge expression, participant observations, and informal interviews. The constant comparative method of data analysis

validated, corroborated, and supported the gradual emergence of these categories. The emic categories—building vocabulary knowledge, clarifying vocabulary knowledge, extending vocabulary knowledge, and using vocabulary knowledge across settings—enabled the researcher to further analyze the data and answer the qualitative research question. Table 4.4 summarizes the emic categories that emerged from the data analyzed.

Table 4.4 *Emic Categories*

Emic Category	Explanation
Building Vocabulary Knowledge	Throughout the data analysis, there was evidence that CLD students did not always possess prior or background knowledge in relation to the new, unknown vocabulary word being targeted. Throughout the IBA Intervention, the CLD students were able to build this foundational vocabulary knowledge.
Clarifying Vocabulary Knowledge	Once the CLD students' vocabulary knowledge was activated, it became evident that clarification was needed because the students' understanding of a given vocabulary word involved a misunderstanding of the word's meaning.
Extending Vocabulary Knowledge	The CLD students had some previous understanding of a vocabulary word. Through meaningful use and multiple exposures with the word, the students were able to extend upon that previous knowledge to reach a deeper understanding.
Using Vocabulary Knowledge Across Settings	The CLD students were able to use a previously learned vocabulary word in a different context and setting at a later point in time.

Findings: Qualitative Research Question

The following narrative is a thick, rich description of what was learned through triangulation of the data gathered with documents demonstrating students' multiple forms of knowledge expression, participant observation, and informal interviews. The headings derived from the emic perspective are indicative of participant voice and are used to organize this discussion of the qualitative findings of this study. In this study, the grade-level teachers set the conditions for CLD students to reach a higher level of word knowledge related to the targeted vocabulary words. The researcher equated a student's higher level of word knowledge with that student's retention of the vocabulary word. In this sense, retention means that a vocabulary word and its meaning are stored in the student's permanent memory where it can be accessed when needed. In the following subsections, the word *knowledge* signifies that a student has reached a level of *retention*.

Building Vocabulary Knowledge

The following excerpts exemplified change in student knowledge related to the targeted vocabulary words from the anthology stories. In these instances, students

initially had no prior or background knowledge of the given vocabulary words. However, after their engagement in vocabulary instruction implementing the IBA Intervention, these students demonstrated newfound understanding of the vocabulary words.

Excerpt One:

Vocabulary word: *barrier*

Student's existing prior and background knowledge: rewrote the word. (SWA-VQB-4-CD)

Student's retained vocabulary knowledge: The *barrier* protected the policeman. (SWA-VQA-4-CD)

Excerpt Two:

Vocabulary word: *emerge*

Student's existing prior and background knowledge: rewrote the word. (SWA-VFB-8-CD)

Student's retained vocabulary knowledge: She *emerged* from the house. (picture of a person stepping out of a house) (SWA-VQA-8-CD))

Excerpt Three:

Vocabulary word: *teeming*

Student's existing prior and background knowledge: rewrote the word. (SWA-VQB-4-CD)

Student's retained vocabulary knowledge: The party was *teeming* with my friends. (SWA-VQA-4-CD)

Excerpt Four:

Vocabulary word: *prediction*

Student's existing prior and background knowledge: rewrote the word. (SWA-RBB-10-CD)

Student's retained vocabulary knowledge: The *prediction* for today is rain. (SWA-RBA-10-CD)

In these excerpts, *barrier, emerge, teeming*, and *predication* were vocabulary words for which the students did not have existing knowledge or prior experience with in their permanent memory bank. The CLD students simply rewrote the words, indicating this lack of existing knowledge. By the end of vocabulary instruction emphasizing

multiple exposures to the words and meaningful use of the words, the students had created and were able to demonstrate an understanding of the vocabulary words, which had been retained.

Clarifying Vocabulary Knowledge

The following excerpts exemplified students' clarification of their existing knowledge of vocabulary words that were targeted in vocabulary instruction implementing the IBA Intervention. These excerpts indicated that the students initially had misconceptions about the targeted vocabulary words. However, through critical multiple exposures and meaningful use of the words during the targeted vocabulary strategies, the students were able to appropriately modify their understandings of the vocabulary words to aid their comprehension the words in the context of the stories.

Excerpt One:

Vocabulary word: *reliable*

Student's existing prior and background knowledge: a lie. (PO-VQB-3-CC)

Student's retained vocabulary knowledge: Diana is a *reliable* friend. (SWA-VQA-3-CC)

In this example, the student initially demonstrated a misunderstanding of the word *reliable*. However, at the end of vocabulary instruction for the story from which this specific word was taken, the student was able to clarify his or her existing knowledge of the vocabulary word. This clarification of the vocabulary word solidified the student's knowledge and retention of the vocabulary word.

Excerpt Two:

This excerpt was taken from the researcher's observation notes as the students were working in small groups on their initial Vocabulary Quilt artifact. The grade-level teacher was walking around the room monitoring the students working on the Vocabulary Quilt. The vocabulary word being targeted was *distinct*.

Student A: Distinct.

Student B: It means you have been dead for a very long time.

Student A: No, I think that it is the wrong word. No, *distinct* not *extinct*. They

sound alike. I am just not sure what the word is. Hey (to another student), what is the word that means you have been dead for a long time.

Student C: Extinct.

Student B: Extinct?

Student A: Hey, we had that in the volcano story.

Student C: Distinct means things are clearly different.

Student B: Well, they sure to sound the same. (PO-11-CE)

The follow-up excerpt indicates Student B's new vocabulary knowledge that was demonstrated at the end of vocabulary instruction.

Student B's retained vocabulary knowledge: I have two distinct colors on my shirt red and green. However, my favorite color is blue. (SWS-VQA-11-CE)

At the beginning of this example, Student B was able to clarify his or her understanding of the word *distinct* through discussion with peers. Originally, the student was confusing *distinct* with the previously learned word, *extinct*. However, through student discussion the participant was able to check his or her understanding of the two words and differentiate the meanings of the words while noting the phonological similarities. At the end of vocabulary instruction, Student B's writing sample indicated retention of the correct meaning of the vocabulary word *distinct*.

Extending Vocabulary Knowledge

The following excerpts exemplified students' expansion of existing word knowledge during instruction implementing the IBA Intervention. In these excerpts, it was evident that students developed a higher level of word knowledge (indicating vocabulary word retention) related to the targeted vocabulary words.

<u>Excerpt One:</u>

Vocabulary word: *thermometer*

Student's existing prior and background knowledge: a picture of a stick with numbers. (SWA-VQB-4-CD)

Vocabulary word: *forecast*

Student's existing prior and background knowledge: a picture of rain. (SWA-VQB-4-CD)

Student's retained vocabulary knowledge: I was watching the forecast that said we were going to have a thunderstorm. It was raining and lightening outside. I looked at the thermometer and it was 63 degrees outside. But all of a sudden, the thunderstorm left and there came a tornado. (SWS-VQA-4-CD)

The student in the excerpt had some prior knowledge of the words *thermometer* and *forecast*. Through instruction that emphasized use of the words in meaningful ways, the grade-level teacher then was able to guide the student to extend his or her understanding of the vocabulary words. As evidenced in the writing sample, the student was able to demonstrate a higher level of word knowledge than that which he or she demonstrated in the initial artifact. The student had internalized his or her knowledge of the vocabulary words and was able to articulate this vocabulary word retention through the writing sample.

Excerpt Two:

Vocabulary word: *naturalist*

Student's existing prior and background knowledge: picture of a tree, flower, and the sun. (SWA-VQB-2-CD)

Student's retained vocabulary knowledge: The *naturalist* was working on a dead tree. (SWA-VQA-2-CD)

The student in this excerpt demonstrated some initial understanding of the word *naturalist*. However, his or her latter use of the word illustrates the understanding that *naturalist* is a person. In this way, the participant built upon his or her existing knowledge of the word to extend his or her overall understanding of the vocabulary word and retain a more informed definition.

Using Vocabulary Knowledge Across Settings

The following excerpts exemplified CLD students' use of vocabulary words learned during the IBA Intervention at a later time or in a variety of contexts. Their use of the vocabulary words at a later date and their ability to apply knowledge of the words in a variety of contexts indicated that the students had internalized and retained the vocabulary.

Excerpt One:

Vocabulary word: *cycle*

Student's existing prior and background knowledge: watercycle (SWA-VFB-8-CE)

Students had learned the phrase *water cycle* two weeks earlier during the IBA Intervention. This student's use of the term "watercycle" in the initial stages of instruction targeting the word *cycle* indicated that the student had moved the phrase *water cycle* to permanent memory.

Excerpt Two:

Vocabulary word: *destruction*

Student's existing prior and background knowledge: To destroy something to grit. (SWA-VQB-6-CD)

Students had learned the vocabulary word *grit* the previous week during the IBA Intervention. This student's use of the word *grit* in the initial stages of instruction targeting the word *destruction* indicated that the student had internalized the meaning of *grit*.

Excerpt Three:

In week three of the IBA Intervention, the students learned the vocabulary word *operate*. In the researcher's observations notes, a student was observed taking apart a mechanical pencil. The grade-level teacher walked by, stopping to look at the student. The student said, "I will operate on my pencil later." (PO-6-CD) This excerpt demonstrated that the student had internalized the vocabulary word and made *operate* a part of his or her permanent memory bank.

Discussion: Qualitative Research Question

The qualitative findings enabled the researcher to answer the research question regarding ways the IBA Intervention affected the CLD students' retention of vocabulary words. The IBA Intervention, which reflected the characteristics of effective vocabulary instruction and critical aspects of second language acquisition, enabled the intervention group to gain new learnings and retain the targeted vocabulary words. The extensive review of the literature demonstrated that instruction emphasizing the IBA Framework elements enhanced CLD students' chances for vocabulary word retention.

The CLD students expressed their retention of the vocabulary words by building, extending, clarifying, and using their vocabulary knowledge across settings. The findings of the qualitative data analysis supported previous research (Manning, 1999; Nagy, 1998; Rupley, Logan, & Nichols, 1999) and provided further insights about vocabulary instruction that builds from students' prior and background knowledge to dramatically impact students' learning of new vocabulary information. The accessing and use of students' prior and background knowledge in the learning process was the foundation for students' vocabulary retention in this study. Through connections to their existing knowledge, CLD students in the intervention group were able to use the vocabulary in meaningful ways during their multiple exposures to the targeted words. These multiple exposures increased the likelihood that students would be able to move their vocabulary knowledge from the acquainted level to the established level (Beck et al., 1979; Graves & Prenn, 1986). This active word learning improved students' retention of new words and helped them develop confidence in using the vocabulary words in context (Stahl, 1986). These results were evident in the data analysis of the triangulated sources of documents (representing multiple forms of knowledge expression), informal interviews, and participant observation.

In addition to being provided with multiple exposures to the targeted vocabulary words in context, the CLD students were able to continue developing a growing repertoire of words and their meanings by demonstrating their understandings through written expression. Beck et al. (1983) states that having students write sentences with learned vocabulary is a way for students to make further connections and show their deep understanding as they use the words in related ways. In allowing the students to express their understandings through writing or some other form of knowledge expression, the grade-level teachers were able to assess which vocabulary words students had internalized at a higher level of word knowledge. The grade-level teachers were able to gauge the depth of specific students' vocabulary growth and assess the students' usage of the words to determine student ownership and internalization. Students who had internalized the words that they had discussed and elaborated on demonstrated their retention of the words by weaving them into their writings (Beck et al., 1982; Richek, 2005).

Throughout the progression of instruction, the grade-level teachers encouraged students to draw on their cultural and linguistic knowledge and share their insights about the targeted vocabulary with peers. This sharing of knowledge through small and large group discussions helped students connect the new words with their existing knowledge. During vocabulary instruction implementing the IBA Intervention, students were able to demonstrate their retention of the vocabulary words by building, clarifying, extending, and using their vocabulary knowledge across settings.

As the qualitative findings from this study demonstrated, CLD students in the intervention group were able to access and integrate learned vocabulary words into their oral and written responses when needed. This indicated that the students had developed a deep, lasting knowledge of the vocabulary words. The end result was an internalization of vocabulary knowledge on the part of the CLD students. This internalization is the primary goal of vocabulary instruction (Stahl, 1999).

The findings of the qualitative component of this study supported the IBA Framework, which provided the theoretical foundation for the IBA Intervention. By creating a learning environment that reflected the characteristics of effective vocabulary instruction and the processes of second language acquisition, the grade-level teachers set the stage for CLD students' retention of the targeted vocabulary words. Students' retention was evident in data collected through the triangulation of student documents (representing multiple forms of knowledge expression), participant observations, and informal interviews. Students who were engaged in vocabulary instruction implementing the IBA Intervention increased their level of vocabulary word knowledge and retained this knowledge for future use.

Summary

This chapter summarized the findings related to each of the three research questions. For quantitative research question one, data analysis suggested there was a statistically significant difference between the pre-intervention and post-intervention MAP assessment scores of the treatment and control groups. Even though both the control and treatment groups made gains in their literacy achievement, the treatment group made greater gains on the MAP assessment. This indicated that the IBA

Intervention had a positive effect on the literacy achievement of CLD students in the treatment group.

For quantitative research question two, the researcher combined three student variable categories (language initiating/responding behaviors, oral responses, and activity-related responses) in ESCRIBE to get an overall students' engagement score. The individual scores on each of the three student variable categories indicated that students whose vocabulary instruction incorporated the targeted vocabulary strategies of the IBA Intervention had a higher level of engagement behavior than students in the control group. This statistically significant trend was also evidenced in the students' overall engagement score. These findings are significant as they support the IBA Framework and validate the positive effect of the IBA Intervention on the engagement of CLD students in the treatment group.

For the qualitative research question, the researcher analyzed the data gathered through documents representing students' multiple forms of knowledge expression (i.e., student artifacts and student writing samples), participant observation, and informal interviews. The emic perspective that emerged from the data suggested that students in the intervention group demonstrated their vocabulary retention by building vocabulary knowledge, clarifying vocabulary knowledge, extending vocabulary knowledge, and using vocabulary knowledge across settings. Exemplars from each of these categories were provided as evidence of the CLD students' attainment of a deeper level of permanent vocabulary knowledge.

Chapter Five discusses the conclusions of this quasi-experimental study based on the quantitative and qualitative research findings. Also explored are the theoretical and practical implications of the study. Recommendations for future studies are then discussed, and the chapter concludes with final thoughts.

Chapter 5 - CONCLUSIONS, IMPLICATIONS, AND RECOMENDATIONS

The purpose of this quasi-experimental study was to examine the impact of the IBA Intervention on fourth and fifth grade CLD students' vocabulary knowledge. The IBA Intervention, which is based on the substantive-theoretical IBA Framework for the study, incorporates targeted vocabulary strategies that have been grounded in the characteristics of effective vocabulary instruction (Allen, 1999; Carr & Wixson, 1996; Nagy, 1998; Watts, 1995) and the processes of purposive, second language acquisition (Thomas & Collier, 1997). The targeted vocabulary strategies were designed to lead to a higher level of student engagement through social and academic collaborations among CLD students and their grade-level peers, which in turn would lead to a higher level of vocabulary retention. The IBA Intervention was designed specifically to meet CLD students' differential vocabulary development needs in the context of a grade-level classroom. Through the quantitative and qualitative data collection and analysis, the positive impacts of the IBA Intervention on the treatment group were demonstrated. The subsequent sections of this chapter detail the: (a) purpose of the study, (b) review of the major findings of the research, (c) discussion of the conclusions derived from the study; (d) theoretical and practical implications of the study; (e) recommendations for further research; and (f) final thoughts of the study.

Purpose of the Study

A publication by the International Reading Association (2007) developed in conjunction with the National Institute of Child Health and Human Development states that there is a great need for more and better research in the vocabulary instruction of second language learners. The research that has been conducted with CLD students indicates that what is known and effective in the vocabulary instruction for native English speakers may also apply to second language learners (August, 2004; Carlo et al., 2004; Padak, 2006). However, educators need to make critical adjustments in grade-level instruction for second language learners. Because CLD students are learning English later

in their lives, their development of English vocabulary needs to be accelerated (Graves & Fitzgerald, 2003). Vocabulary development for CLD students requires differential attention to the students' cultural and linguistic background knowledge. Therefore, the notion that what is good instruction for native English speakers is also good instruction for CLD students can be, and often is, misleading (Harper & de Jong, 2004).

The National Literacy Panel's preliminary results on vocabulary development practices (August, 2004) indicate that there are some differences that exist between the two language groups (native-English-speaking students and CLD students). The major differences are that CLD students generally require more distinctive scaffolding from the grade-level teacher as well as a focus on research-based vocabulary strategy instruction (Padak, 2006). Because CLD students may not know many of the English vocabulary words that comprise the foundation of native English speakers' early vocabulary development experiences, they need even more explicit teaching and support than monolingual English speakers in order to learn the new words (Gersten & Geva, 2003). If CLD students' vocabulary needs are not addressed, the achievement gap between CLD students and native English speakers will continue to widen (Carlo et al., 2004).

This dissertation study addressed this need for more vocabulary research specific to CLD students. This study was a step toward a more intentional and proactive instruction of effective vocabulary instruction for CLD students. The following research questions guided the study.

<u>Quantitative Research Question One:</u>

To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' literacy achievement as measured by the Measures of Academic Progress (MAP) assessment?

<u>Quantitative Research Question Two:</u>

To what extent does the IBA Intervention, which is based on the IBA Framework, affect CLD students' engagement as measured by the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE)?

<u>Qualitative Research Question:</u>

In what ways does implementation of the IBA Intervention, which is based on the IBA Framework, affect CLD students' retention of vocabulary?

In order to answer the research questions, this quasi-experimental study employed both quantitative and qualitative methods of data collection and analysis. The quantitative data collection tools used were the Measurement of Academic Progress (MAP) assessment and the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE). The qualitative data collection tools included multiple forms of knowledge expression demonstrated through student artifacts and student writing samples, participant observation, and informal interviews.

Based on the data collected and analyzed, several major findings were revealed. These major findings are briefly presented and discussed in the following section.

Summary of the Major Findings

The purpose of the study was to determine the effect of the IBA Intervention, which is based on the IBA Framework, on the vocabulary development of CLD students. The major findings of this study are based on quantitative measures with qualitative support. Regarding the quantitative aspects of the study, the major findings were based on the independent sample *t*-test results of the Measures of Academic Progress (MAP) assessment and the Ecobehavioral System for the Contextual Recording of Interactional Bilingual Environments (ESCRIBE).

For quantitative research question one, data analysis showed there was a statistically significant difference between the pre-intervention and post-intervention MAP assessment scores of the treatment and control groups. Even though both the control and treatment groups made gains in their literacy achievement, the treatment group made greater gains on the MAP assessment.

The null hypothesis for quantitative research question one stated: *There will be no significant difference in literacy achievement, as demonstrated in the change from the pre-intervention to post-intervention MAP assessment scores, between the treatment group and the control group.* This null hypothesis was rejected with an F statistic of [t (28) = 3.50, p = .002] indicating that there were was a statistically significant difference between the pre-intervention and post-intervention scores of the treatment and control groups.

For quantitative research question two, the researcher combined three student variable categories (language initiating/responding behaviors, oral responses, and activity-related responses) in ESCRIBE to get an overall students' engagement score. The individual scores on each of the three student variable categories indicated that students whose vocabulary instruction incorporated the targeted vocabulary strategies of the IBA Intervention had a higher level of engagement behavior than students in the control group. This statistically significant trend was also evidenced in the students' overall engagement score. These findings were significant as they supported the IBA Framework and validated the positive effect of the IBA Intervention.

The null hypothesis for quantitative research question two stated: *There will be no significant difference in student engagement, as demonstrated by ESCRIBE scores, between the treatment group and the control group.* This null hypothesis was rejected, as there was a statistically significant difference in the students' level of engagement in the treatment group compared to the students' level of engagement in the control group, [t (45) = 5.39, p = .0001]. In addition, there was a statistically significant difference in each of the individual student behavior response categories: for language initiating/responding behaviors [t (66) = 3.63, p = .001]; for oral responses [t (66) = 3.31, p = .002]; and for activity-related responses [t (43) = 6.38, p = .001].

The findings of the qualitative data analysis can be summarized according to the emic categories that emerged from this analysis: building vocabulary knowledge, clarifying vocabulary knowledge, extending vocabulary knowledge, and using vocabulary knowledge across settings. *Building vocabulary knowledge* reflected participants who initially did not have existing prior or background knowledge related to a new, unknown vocabulary word. Within this category, there was evidence that by the end of vocabulary instruction, participants had gained an established level of understanding with the vocabulary word.

The second category that emerged during data analysis was *clarifying vocabulary knowledge*. Throughout vocabulary instruction, participants were able to voice their existing knowledge of a given vocabulary word and clarify any misunderstandings about the word and the way the word was used in the context of a particular story. Within this

category, there was evidence that participants had clarified their knowledge of particular vocabulary words.

The third category that emerged from the three types of data was *extending vocabulary knowledge*. This category reflected participants who were able to take their knowledge of a specific vocabulary word from the acquainted level of vocabulary knowledge to a more established level of knowledge by the end of vocabulary instruction. A word at the acquainted level is recognizable to the student; however, the student does not fully understand the meaning of the word. Students need multiple exposures with the acquainted word to reach the highest level of word knowledge. A vocabulary word is fully understood and easily recognizable to the student at the established level.

The fourth category that emerged from the data was *using vocabulary knowledge across settings*. CLD students were able to integrate previously learned vocabulary words into their oral and written responses when needed and accessed. Such vocabulary use indicated that CLD students had developed a deep, lasting knowledge of the vocabulary words. The end result was an internalization of vocabulary knowledge on the part of the CLD students. Such internalization is the primary goal of vocabulary instruction (Stahl, 1999).

Through connections to their existing knowledge, CLD students in the intervention group were able to use the targeted vocabulary words in meaningful ways throughout multiple exposures to the words. They were able to make meaningful connections to the vocabulary words in a variety of contexts. During the IBA Intervention, CLD students were given time to process the new information and integrate their new understandings with their existing/previously acquired knowledge. By the end of vocabulary instruction, students demonstrated a deeper understanding and retention of the vocabulary words.

The findings of this study concurred with the previous research of Allen (1999), Swan (2003), and Blachowicz and Fischer (2000) who found that for effective vocabulary instruction: (1) students' prior and background knowledge should be activated and built upon throughout instruction of new vocabulary and (2) students should be actively engaged in vocabulary instruction to enhance their retention of vocabulary learned. In addition, this study more clearly defined the role of vocabulary instruction for

CLD students and strategies that can be used to promote CLD students' retention of vocabulary.

The findings of this study, as detailed in Chapter Four, indicated that the IBA Intervention had a positive effect on the vocabulary development of CLD students. The following section presents the conclusions that were drawn as a result of these findings.

Conclusions of the Study

This study examined the affects of the IBA Intervention on CLD students' vocabulary development. The intervention took place over an eight-week period with the students taking the MAP assessment prior to the intervention and shortly after the intervention was implemented. In the interim, the researcher observed the engagement of students from both the treatment and the control group during vocabulary instruction using the ESCRIBE data collection tool. The researcher also collected students' multiple forms of knowledge expression that were used to demonstrate the students' knowledge and retention of the vocabulary words. The results of data analysis indicated that the treatment group made greater academic literacy gains than the control group (as indicated by MAP assessment scores) and had a higher level of engagement during vocabulary instruction (as indicated by ESCRIBE scores).

The outcomes of this study supported the substantive theoretical framework, which served as the foundation for the IBA Intervention. The IBA Framework provided a theoretical rationale for (a) activating and building upon CLD students' prior and background knowledge and (b) actively engaging students in vocabulary instruction through meaningful use of vocabulary and multiple exposures to the vocabulary words. The incorporation of these components of effective vocabulary instruction through implementation of the IBA Intervention with CLD students in the treatment group yielded significant outcomes.

All the targeted vocabulary strategies of the IBA Intervention intentionally activated the prior and background knowledge of CLD students in the treatment group in the "before" phase of vocabulary instruction. As noted by Nagy (1998), students must relate new words to their background and prior knowledge in order for vocabulary instruction to be effective. CLD students in the treatment group were able to build from

their native language and culture to enhance their understanding and connections to the new unknown vocabulary words. By allowing students to develop connections between their existing knowledge and the new vocabulary words, students are more likely to feel personally connected to the vocabulary and have an increased chance for developing ownership of the vocabulary (Blachowicz & Fisher, 2000).

In the "during" phase of instruction, CLD students in the treatment group continued their engagement with the new vocabulary words. The students had multiple exposures to the words that allowed for their meaningful use of the vocabulary. Students learned how to use the words in context, which enabled them to extend and clarify their understanding of the vocabulary words. Richek (2005) found that active student engagement not only enhances the learning experience but also gets students excited about the vocabulary words, which positively affects retention. For vocabulary instruction to have a lasting impact, CLD students must become actively engaged (Reutzel & Cooter, 1999).

In the "after" phase of vocabulary instruction, CLD students in the treatment group were able to demonstrate their higher-level word knowledge and retention by sharing their new understanding of the vocabulary words targeted in the anthology. After being exposed to the vocabulary in multiple contexts, CLD students were able to move beyond the *acquainted level* of word knowledge (word recognition) to the *established level* (full understanding) (Beck et al., 1979; Graves & Prenn, 1986). When students reach the established level word knowledge, the goal of vocabulary instruction is met (Stahl, 1999).

Students' engagement throughout the before, during, and after phases of vocabulary instruction implementing the IBA Intervention was thoroughly explored through the ESCRIBE observation process. The treatment group had a greater overall level of student engagement than the control group. The significant difference in students' overall engagement scores between the treatment group and control group indicated that the IBA Intervention strategies, as a component of vocabulary instruction for CLD students, were useful for promoting the kind of engagement that leads to greater vocabulary knowledge. A general conclusion that was drawn from this study was that the engagement level of CLD students who received the IBA Intervention was significantly

affected by the progression of vocabulary instruction that incorporated targeted vocabulary strategies, which integrated components of effective vocabulary instruction and processes of second language acquisition.

The CLD students' engagement in vocabulary instruction that incorporated the targeted vocabulary strategies also had an effect on their overall literacy achievement. Previous research has concluded that vocabulary knowledge is a critical factor in the academic success of CLD students (Folse, 2004; Nation, 2001; Proctor, Carlo, August, & Snow, 2005). Analysis of the MAP assessment scores yielded similar findings. CLD students in the treatment group made significantly greater gains than those in the control group on the literacy component of the standardized MAP assessment. Jimenez (1994) identified vocabulary as the "single most encountered obstacle" for CLD students on standardized assessments (p. 103); however, through vocabulary instruction based on the IBA Framework, CLD students were able to make significant gains in their literacy achievement. A general conclusion that was drawn from this study was that the literacy achievement of CLD students who received the IBA Intervention was significantly affected by vocabulary instruction that encouraged student engagement through targeted strategies, which integrated components of effective vocabulary instruction and processes of second language acquisition.

From analysis of the qualitative data, it was evident that CLD students in the intervention group developed and retained a higher level of vocabulary knowledge. Being able to access their prior and background knowledge throughout the learning process appears to be the foundation for the students' vocabulary development. Through connections to their existing knowledge, the students were able to use the vocabulary words in meaningful ways throughout their multiple exposures to the words in a variety of contexts. The CLD students were able to reiterate their new understandings of the vocabulary words and demonstrate their retention of the vocabulary using multiple forms of expression. A general conclusion that was drawn from this study was that CLD students who received the IBA Intervention benefited from the targeted strategies, as evidenced by their demonstrated retention of the vocabulary words.

The quantitative and qualitative findings of this quasi-experimental study provided the researcher with a high level of confidence about the conclusions that were

drawn. The rigorous quantitative analysis of the data enabled the researcher to determine that the IBA Intervention had a positive effect on CLD students' engagement in vocabulary instruction and literacy achievement. Yet the researcher also wanted to have a participant's understanding of the vocabulary development process that made it possible for students in the treatment group to make significant gains on the MAP assessment. The qualitative data analysis yielded these desired insights and illuminated how CLD students in the intervention group were able to build, clarify, extend, and use their vocabulary knowledge across settings.

The theoretical and practical implications of the study are discussed in the section to follow.

Implications of the Study

This quasi-experimental study examined the affects of the theoretically based IBA Intervention on CLD students' engagement, literacy achievement, and vocabulary retention. Moreover, the findings have theoretical and practical significance for educators at all levels as they strive to provide effective vocabulary instruction for CLD students in their classrooms.

The implications for this quasi-experimental study are examined at two levels: the theoretical significance of the study and the practical significance of the research. At the theoretical level, the significance of this study is connected to the extensive literature review highlighted in this chapter and detailed in Chapter Two. At the practical level, the significance of this study relates to the implications of the IBA Framework for pre-service education programs, staff developers, and grade-level and content-area teachers.

Theoretical Significance

As previously stated in Chapter Two, there has not been enough research on the most effective methods of vocabulary instruction for CLD students. Therefore, this study examined a unique framework for vocabulary instruction with CLD students in grade-level classrooms that emphasized targeted vocabulary strategies. To do this, the researcher completed an extensive review of the literature related to effective vocabulary instruction and second language acquisition. As a result of this exhaustive literature review, a substantive theoretical framework was developed by blending key elements

from both domains of research. The IBA Framework was a product of the integration of what we currently know about best practices of effective vocabulary instruction (Allen, 1999; Carr & Wixson, 1996; Nagy, 1998; Watts, 1995) as well as second language acquisition processes, as summarized through the prism model (Thomas & Collier, 1997). This quasi-experimental study, through its exploration of the affects the IBA Intervention on the vocabulary development of CLD students, thus contributes to the field needed information on effective vocabulary instruction for CLD students.

Through this contribution, it is agrued that the IBA Framework utilizes vocabulary strategies that increase student engagement and use of academic vocabulary needed for retention of vocabulary word knowledge. This study extended the previous research that had been conducted with CLD students indicating that what is known and effective about vocabulary instruction for native English speakers applies also to second language learners (August, 2004; Carlo et al., 2004; Padak, 2006). The IBA Framework incorporates the research on second language acquisition, which was identified as an important aspect by the National Literacy Panel's preliminary results. Those results indicated that there are some differences that exist between the two language groups of students (August, 2004).

This study broadens our understanding of the importance to activate CLD students' background and prior knowledge through vocabulary strategies can lead to higher student engagement, literacy achievement, and retention of academic vocabulary. The IBA Framework provides a structure for integrating vocabulary within the grade-level classroom. The elements are not necessarily new. However, they are imperative for vocabulary development and literacy achievement among CLD students. Together, the elements of the IBA framework create a template for the development of vocabulary strategies specific to the needs of CLD students.

Vocabulary instruction for CLD students is more effective when students are: (a) allowed to use their experiences and background knowledge to enhance their understanding of vocabulary and (b) engaged with the vocabulary in meaningful ways that result in multiple exposures to the targeted words. As Faltis (2001) notes, teachers who foster a learning environment that encourages the active engagement of all students, build on prior knowledge, and integrate language learning into literacy activities

demonstrate their commitment to meeting the needs of each and every CLD student. Through implementation of the IBA Intervention, the grade-level teachers and CLD students in this study experienced this type of learning environment.

The following section summarizes the practical significance of the research by detailing the implications for pre-service education programs, staff developers, and grade-level and content-area teachers.

Practical Significance

At the level of practical significance, the findings from this study have implications for pre-service education programs, staff developers, and grade-level and content-area teachers. The research findings ultimately could prompt changes in the way teachers deliver academic vocabulary instruction in grade-level classrooms. In a practical sense, the IBA Framework can serve as a guide for vocabulary instruction with CLD students regardless of the reading program implemented in the classroom. In using the IBA Framework, grade-level teachers can incorporate content-area vocabulary while having students actively engaged in vocabulary development.

Implications for Pre-service Educational Programs

The findings of this study are significant pre-service teachers in educational programs. As the national demographics illustrate, the CLD student population is continually growing. This national picture underscores the need for practical and effective applications in the university setting related to curriculum planning and literacy development, particularly vocabulary instruction. The findings of the study provide university professors with insights into some of the instructional challenges facing future educators of CLD students, particularly those challenges related to vocabulary development. Furthermore, the findings of the study offer future educators a vocabulary instructional framework as a starting point from which they can proactively address challenges in vocabulary development.

Implications for Staff Developers

Staff developers play an important role in updating and informing grade-level teachers and other support staff of the most effective and current scientifically research-

based instructional practices for educating second language learners. The findings of this study are particularly significant for grade-level and content-area teachers instructing CLD students who are simultaneously learning the English language and grade-level vocabulary. The targeted vocabulary strategies involved in the IBA Intervention enabled CLD students to draw on their prior and background knowledge in English and the native language as well as other cultural aspects and make public these connections in a low-anxiety environment. Throughout vocabulary instruction, CLD students use their existing knowledge as a vehicle for learning new, unknown vocabulary throughout the vocabulary instruction process. Students are provided with multiple exposures to the vocabulary words in many contexts and multiple opportunities to use the words in meaningful ways. This allows the students to clarify and extend their vocabulary repertoire. At the end of vocabulary instruction, students are able to demonstrate their newly learned vocabulary knowledge using multiple forms of expression. This study found that this type of vocabulary instruction increased students' engagement level leading to a higher level of vocabulary word retention.

This study demonstrated that teachers who provide CLD students with purposeful vocabulary instruction can increase not only the students' comprehension of the vocabulary words but also their ability to use the vocabulary words at a later time and in different contexts. These findings are important for helping educators provide the most effective vocabulary instruction and for closing the vocabulary achievement gap.

Implications for Grade-Level and Content-Area Teachers

The demographic trends indicate that the greatest number of CLD students speak Spanish as their first language; however, there are many students who speak one of the four hundred other languages represented in the U.S. school system (NCELA, 2007). Over the past decade, the number of CLD students enrolled in public schools in the United States has increased by 105% (Kindler, 2002). This increase is projected to continue for the next several decades. By the year 2030, 40% of school-aged students are expected speak a language other than English (U.S. Census Bureau, 2000). Based on this growth in the CLD student population across the United States, grade-level teachers need to consider the instructional methods they can use to address the needs of their growing CLD student populations.

The quantitative and qualitative results of this study will help grade-level teachers understand the importance of selecting vocabulary strategies that are designed to promote student engagement and the development of higher-level word knowledge. The targeted vocabulary strategies in this study followed the full progression of vocabulary instruction. The strategies activated students' prior and background knowledge associated with the unknown vocabulary words in the "before" phase to prepare CLD students for learning the words in a variety of contexts. In the "during" phase of vocabulary instruction, the grade-level teachers helped students make connections between known words and the unknown vocabulary words. The CLD students engaged in ongoing discussion, which reiterated the key vocabulary while making critical connections to the students' prior and background knowledge. These activities enhanced the CLD students' vocabulary knowledge development by providing multiple exposures to the words in ways that encouraged meaningful use. In the "after" phase of vocabulary instruction, the CLD students were able to express their new learnings of the vocabulary word by revisiting their initial writing sample or work artifact and clarifying or extending this existing knowledge with their new knowledge. The end result was a higher level of word knowledge on the part of the CLD students. The vocabulary strategies used in this study easily can be incorporated into the content-area or guided reading lesson. These vocabulary strategies can replace the worksheet or dictionary work found in traditional vocabulary development programs. The grade-level or content-area curriculum that is required within a district setting provides the primary source of material and vocabulary words to be learned.

Study results support grade-level teachers in being more intentional in how and when they use vocabulary strategies with CLD students. It is imperative that grade-level teachers go beyond facilitating language acquisition to help CLD students acquire academic content vocabulary. Teachers of CLD students must take initiative in designing and implementing instruction that incorporates students' native languages and cultures in order to capitalize on the unique opportunities for learning that diverse students bring to the classroom. The IBA Framework might serve as a useful guide in this respect, as vocabulary instruction implementing the framework allows CLD students to incorporate their culture and language into the vocabulary learning process.

The quantitative data analysis indicated that as a result of the IBA Intervention, CLD students made statistically greater improvement on the MAP standardized assessment. Because of district and federal mandates that call for increased accountability and standardized testing, this is a significant finding. Grade-level and content-area teachers may want to consider incorporating components of the IBA Intervention to aid CLD students' development of vocabulary knowledge, which has a positive impact on students' reading comprehension (Baker, Simmons, & Kameenui, 2004). As indicated in the qualitative data analysis of this study, vocabulary instruction that moves beyond brief, single interactions with vocabulary words to more in-depth types of interaction enables learners to reach the *established level* of word knowledge (Beck et al., 1979; Graves & Prenn, 1986).

Bromley (2007) states that "word learning is a complicated process. It requires giving students a variety of opportunities to connect new words to related words, analyze word structure, understand multiple meanings, and use words actively in authentic ways" (p. 536). This type of vocabulary instruction is something that may not be a particular strength for classroom teachers and can easily be overlooked considering all the other skill areas that need to be addressed throughout the day. However, the IBA Framework provides grade-level and content-area teachers with a framework for implementing effective vocabulary instruction and providing CLD students with these types of opportunities.

Recommendations for Further Research

A publication by the International Reading Association (2007) developed in conjunction with the National Institute of Child Health and Human Development states that "research has demonstrated that ELL students generally master decoding and fluency fairly quickly and well, but the areas of vocabulary, background knowledge, and reading comprehension have not been well studied. It is essential that research be conducted on how best to teach vocabulary and instructional strategies for supporting the development of reading comprehension" (p. 7). This quasi-experimental study addressed this notable lack of research on effective vocabulary instruction with CLD students.

The qualitative data from this study demonstrated that the IBA Intervention has benefits for CLD students' vocabulary retention. Grade-level teachers implementing the IBA Intervention accessed students' background and prior knowledge, connected this known information to the unknown vocabulary by providing opportunities for meaningful use and multiple exposures, and addressed the sociocultural needs of the students. This study was conducted in fourth and fifth grade classrooms because research indicates that insufficient vocabulary knowledge increases problems with reading comprehension (Beck, McKeown, & Kucan, 2002). Further research on the impact of the IBA Intervention on CLD students in early childhood would add valuable knowledge to the field. Students who enter school demonstrate meaningful differences in vocabulary knowledge as a result of experiences with and exposure to literacy and language activities (Hart & Risley, 1995). In addition, children with restricted vocabulary by third grade have declining reading comprehension scores in later elementary years (Chall, Jacobs, & Baldwin, 1990). It is important to focus on the primary grades to change the course of vocabulary learning for these students, especially those who are second language learners.

Many teachers introduce vocabulary before a lesson. However, few teachers realize they can teach vocabulary during or at the end of a lesson (Konapck, 1991; Watts, 1995). This study explored vocabulary strategies and techniques that carried the vocabulary words through the before, during, and after progression of instruction. CLD students were provided multiple exposures to the vocabulary words in ways that promoted meaningful use of the words in varied contexts. Having established positive results with a small number of CLD students in furthering their vocabulary development, this study provides a vocabulary instruction framework and vocabulary strategies that merit further study. Replication of these results with a larger sample population and over a longer period of time is needed to firmly establish the effectiveness of the IBA Intervention. Additional more in-depth qualitative studies are needed to provide further evidence of the importance of supporting vocabulary development throughout the three phases of instruction: the "before" phase of activating students' background and prior knowledge; the "during" phase of connecting the unknown vocabulary words to this accessed existing knowledge; and the "after" phase of allowing the students to

demonstrate higher-level word knowledge and retention using multiple forms of expression.

Finally, implementation of the IBA Intervention in a variety of school environments with a variety of student populations would increase the validity of this intervention for all students. The fact that this intervention is rooted in a substantive theoretical framework that blends the effective characteristics of vocabulary instruction for monolingual English-speaking students and second language learners implies that this intervention could be implemented with multiple populations.

Final Thoughts

The publication by the International Reading Association (2007) developed in conjunction with the National Institute of Child Health and Human Development stated that there is a great need for more and better research in the vocabulary instruction of second language learners. This study has found that implementation of the IBA Intervention positively affected CLD students' vocabulary development. Not only did the IBA Intervention affect statistical gains on students' standardized test performance, but the intervention also promoted CLD students' retention of vocabulary word knowledge through active engagement with the vocabulary words. This active engagement was promoted by building on the students' accessed prior and background knowledge and by making connections between this known information and the unknown vocabulary words being targeted. CLD students were provided with multiple exposures to the words and were allowed to use the words in meaningful ways. The IBA Intervention provided the platform for students' prior and background knowledge to be made public in a low-anxiety environment.

The IBA Framework incorporates effective characteristics of vocabulary instruction (Allen, 1999; Carr & Wixson, 1996; Nagy, 1998; Watts, 1995) by (a) accessing students' background knowledge, (b) connecting unknown vocabulary words to known knowledge, (c) ensuring opportunities for meaningful use of the vocabulary words, (d) providing multiple exposures, and (e) focusing on higher-level word knowledge. The IBA Framework also addresses second language acquisition by incorporating the linguistic, academic, cognitive, and sociocultural processes of the prism

model (Thomas & Collier, 1997). The IBA Framework provides educators with a structure for integrating vocabulary within daily classroom instruction. The elements are not necessarily new; however, they are imperative for higher academic achievement among CLD students.

The targeted vocabulary strategies incorporate characteristics of effective vocabulary instruction and processes of second language acquisition to provide a forum for sharing and expressing knowledge that contributes to an inclusive, engaging environment for learning (Waxman & Tellez, 2002). While the strategies of this intervention proved successful in promoting CLD students' vocabulary development, more research is needed to expand these strategies, create new strategies with the same premise, and explore use of such strategies in students' development and retention of higher-level word knowledge. In this way, the study will continue to make important contributions toward enhancing educators' understanding of how vocabulary instruction for second language learners can be provided within the grade-level classroom so that more CLD students can experience academic success.

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Appendix A - Timeline of Events

December 2007	Proposal Defense
January 2008	Approval from Committee for Research Involving Human Subjects
January 2008	Start classroom modeling, observations, and pre-assessments of selected students
February 2008	Code data collected from observations and student work samples; ESCRIBE assessment conducted; Code data from ESCRIBE
February 2008	Conduct and code data from interviews
February 2008	Post assessment data collected
March 2008	Analyze data and complete chapters
April 2008	Analyze data and complete chapters
May 2008	Analyze data and complete chapters
June 2008	Finish dissertation
July 2008	Defend dissertation

Appendix B - Participation Letters

Dear Educator:

You have been chosen for this study because you are a certified teacher who is currently teaching at an elementary school that has a high rate of diversity represented in the student body. As the number of culturally and linguistically diverse (CLD) students in public schools in Kansas is increasing, you are very likely to have more CLD students in your classroom every year. With all schools and educators being under tremendous pressure to prove the effectiveness of their programs due to NCLB and the growing number of CLD students in public schools, it is urgent for educators to adopt instructional strategies that can facilitate CLD students' academic success.

Many studies have shown that purposeful vocabulary instruction is essential to a CLD student's academic achievement and language development. The purpose of this study is to explore CLD students' level of engagement and retention of vocabulary knowledge as a result of vocabulary instruction that activates their prior and background knowledge.

Your participation will be completely confidential. You, personally, will not be identified in any way and will not be named in any report. Only summarized date will be shared. Your participation is also completely voluntary. You may stop participating at any time without explanation, penalty, or loss of benefits to which you would otherwise be entitled. The findings from this research study will be published in order to inform other educators about best practices for vocabulary instruction. Permission is requested to publish the findings of this study, including students' writing/work samples (parental permission will also be obtained). The information about the students will be used anonymously and you and your students' right to privacy will be protected.

Your signature indicates that you have read and understand this letter and that you willingly agree to participate in this study. Your participation is truly appreciated. If you have any questions regarding to this study, please contact Dr. Socorro Herrera at sococo@ksu.edu or by phone at 785-532-2125.

Thank you for your cooperation.

Sincerely,

Stephanie Wessels

Authorization:

I verify that my signature below indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.

Signature of Participating Teacher _____Date_____

Signature of Researcher _____Date_____

For IRB Use Only

This consent form is approved for use from _____ to _____.

_____ Executive Secretary, Human Research Committee
(Signature)

Parent Consent Form

January, 2008

Dear Parent or Guardian:

The purpose of this letter is to request your permission for your son/daughter to participate in a research project that is being conducted by Stephanie Wessels, a doctoral candidate at Kansas State University. The purpose of this study is to examine children's development of vocabulary in English. Children in this study will be in regular classroom situations as the study examines instructional practices in literacy. Thus, your child's instructional program will not be interrupted if you choose to have your child participate. Assessment data will be collected during the school day and will be utilized to enhance instruction. Your child will only participate in this study if you grant your written permission. Further, any data on your child collected for purposes of this study will be used anonymously and your child's right to privacy will be protected.

Permission is requested for your child to participate in two phases of this study:
1) Student writing/work samples, and 2) Collection of data on test scores and other descriptive data from student records.

Permission is requested to use test result data from your child's cumulative file, and assessment data collected by the teacher in your child's classroom as well as other information regarding number of years your child has been in the school district, your child's age, ethnicity, and language background.

Risks and Discomforts: There are no risks involved for students participating in this study.
Benefits: The school district will benefit from your child's participation in this study. This study will offer administrators and teachers in your district important feedback about effective vocabulary instruction and assessment appropriate for students in grade-level classrooms. Therefore, your child will experience the benefit of improved instruction over time.
Cost to Participant: There is no cost to your child for participation in this study.
Study Withdrawal: You and your child have the right to withdraw consent or stop participating at any time. Your child has the right to refuse to answer any question(s) or participate in any procedure for any reason.
Confidentiality: The researcher will make every effort to maintain the privacy and confidentiality of your child's data in every step of the study: data collection, data analysis and reporting of study results. Your child's real name will not be used. A numerical reference will be assigned and used instead.

Other than the researcher, only regulatory agencies such as the Office of Human Research Protections and Kansas State University Human Research Committee and administrators of the United States Department of Education may see your individual data as part of routine audits.

Permission to Publish: To inform other educators about best practices for vocabulary instruction, permission is requested to publish the findings of this study, including your child's student writing/work samples. Information about your child as well as his/her student writing/work samples will be used anonymously and your child's right to privacy will be protected.

Invitation for Questions: If you have questions about this study, you should ask the researcher before you sign this consent form. If you have questions regarding your rights as a participant, any concerns regarding this project or any dissatisfaction with any aspect of this study, you may report them -- confidentially, if you wish – to Jerry Jax, Associate Vice Provost for Research Compliance and University Veterinarian, 1 Fairchild Hall, Kansas State University, Manhattan, KS 66506, or by telephone to (785) 532-3224. You may also contact the Principal Investigator of the study, Socorro Herrera, Professor of Elementary Education at sococo@ksu.edu or by telephone at (785) 532-2125, or Stephanie Wessels, a doctoral candidate at swessels@ksu.edu or by telephone at (785) 532-2125.

The anticipated length of the study is approximately 6 weeks. The approval date for the study is ____ and the expiration date is _____.

If you agree to have your child participate in the study, please sign this form and return it with your child to the principal's office at his/her school as soon as possible.

Respectfully,

Stephanie Wessels

Authorization: I have read this paper about the study or it was read to me. I know that my child's participation in this study is voluntary research. I choose to allow my child to be part of this study. I know that I can withdraw my child from this study at any time.

I verify that my signature below indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described, and that my signature acknowledges that I have received a signed and dated copy of this consent form.

Name of Child_____

Name of Parent or Legal Guardian (printed) _____

Signature of Parent or Legal Guardian _____ Date _____

Signature of Researcher _____Date_____

Signature of Witness/Teacher_____Date_____

For IRB Use Only

This consent form is approved for use from _____ to _____.

_____ Executive Secretary, Human Research Committee
(Signature)

Enero 2008

Estimado Padre de Familia o Tutor:

El propósito de esta carta es para solicitarle a usted que por favor autorize a su hijo(a) a participar en un proyecto de investigación educativo, conducido por Stephanie Wessels, una candidata para el doctorado en la universidad de Kansas State. El objetivo de este estudio es examinar el desarrollo de las detrezas del vocabulario en inglés de su hijo(a). La escritura de los niños que participen en el estudio será observada en los salones de clase durante la enseñanza de la escritura. Información se obtendrá durante el día escolar y será utilizada para mejorar la instrucción de su hijo/a. No interrumpirá el programa de instrucción que se lleva a cabo diariamente en el salón de clases de su hijo/hija. Su hijo/hija participará en el estudio solamente si Usted firma que está de acuerdo. La información que se obtenga de esta investigación va a servir para ayudar a los niños a aprender mejor a leer en inglés y el nombre de su niño/a nunca será mencionado en los resultados de este estudio.

Le pedimos permiso para que su niño sea parte de las dos fases del estudio: 1) Ejemplares de escritura/trabjo de su hijo/a y 2) Colección de información sobre examenes de escritura u otra información descriptiva que se encuentre en los archivos académicos de los niños.

El estudio requiere su permiso para obtener información académica del archivo de su hijo/a, de su maestro/a e información adicional que pueda incluir el número de años que su hijo/a a estado en la escuela, su cultura y el idioma que habla.

Riesgos: Le garantizamos que no hay ningún riesgo si su hijo(a) participa en este studio.
Beneficios: El distrito escolar se beneficiará de la participación de su hijo/a en este estudio. El estudio ofrecerá a administradores y maestros en su distrito información importante acerca de la enseñanza efectiva del vocabulario y el uso de exámenes apropiados para alumnos en el salón de clases. Es importante reconocer que su hijo/a recibirá el beneficio de instrucción que sigue mejorando através del tiempo.
Costos de Participación: Su hijo(a) no tiene que pagar ningún costo por participar en esta investigación educativa.
Pago por Participación: No se le pagara nada a su hijo(a) por participar en esta investigación educativa.
Derecho de No Participar: Usted y su hijo/a tienen el derecho de decidir en cualquier momento que no quieren participar. Su hijo/a tiene el derecho de no contestar preguntas o participar en cualquier aspecto del estudio sin dar una razón por su decisión.
Confidencialidad: Le garantizamos que durante todo el proceso la información se mantendrá en forma privada. Los nombres de los participantes no se darán a conocer en ninguna forma durante todo el proceso del estudio. El nombre de su hijo/a no se usará. En lugar de usar nombres, se usarán números para protejer la identidad de cada alumno.

Aparte de la persona que lleva a cabo el estudio, solo la agencia de la protección de personas particpando en estudios – the Office of Human Research Protections and Kansas State University Committee y administradores del Departamento de Educación de los Estados Unidos puedan ver información específica del estudio.

Permiso para Publicar: Para informar a otros maestros sobre las mejores practicas en instrucción de vocabulario, se require permiso para poder publicar los resultados de este estudio, incluyendo los ejemplares de escritura/trabjo de su hijo(a) estudiante. La información sobre su hijo(a) como sus ejemplares de escritura/trabajo serán usados anonimamente y los derechos de privacidad de su hijo(a) serán protejidos.

Lo Invitamos a Preguntar: Si usted tiene alguna pregunta sobre esta investigación educativa, por favor comuníquese con la persona que llevará a cabo el estudio – Stephanie Wessels - antes de dar su permiso. Si tiene preguntas acerca de sus derechos como particpante o quejas de cualquier aspecto del estudio se pueden reportar, de una manera confidencial si gusta a Jerry Jax, Associate Vice Provost For Research compliance and University Veterenarian, 1 Fairchild Hall, Kansas State University, Manhattan, KS 66506, o por teléfono a (785) 532-3224. También se puede poner en contacto con la investigadora principal del estudio, Dra. Socorro Herrera, por email a sococo@ksu.edu or por teléfono a (785) 532-2125 o con Stephanie Wessels por email a swessels@ksu.edu o por teléfono a (785) 532-2125.

Se espera que el estudio tomará aproximadamente 6 semanas para cumplirse. La fecha de aprobación es_____ y la fecha en que se expira esta aprobación es_____.

Si está de acuerdo en que su hijo participe en este estudio, por favor firme la siguiente página devuélvala con su niño/a lo más pronto posible a la oficina del director de su escuela.

Atentamente,

Stephanie Wessels

Autorización: Entiendo la información explicada en este documento y voluntariamente doy mi consentimiento para que mi hijo(a) participe en la investigación educativo. También entiendo que tengo el derecho de dejar de participar en este estudio en cualquier momento.

Verifico que mi firma abajo indica que he leído y que entiendo esta autorización y que doy mi permiso para participar en este estudio bajo los terminus describidos y que mi firma indica que he recibido una copia firmada de esta carta.

Nombre del Alumno _____

Nombre del Padre o tutor _____

Firma del Padre o tutor _____Fecha_____

Firma del Investigador _____ Fecha_____

Firma del Testigo/Maestro_____Fecha_____

For HRC Use Only

This consent form is approved for use from _____ to _____.

_____ Executive Secretary, Human Research Committee (Signature)

Appendix C - Vocabulary Words

Vocabulary words and stories used throughout the IBA Intervention

Story: John Henry
Rebuild
Acre
Grit
Commotion
Dynamite
Pulverize

Book: Volcano
Mantle
Erupt
Dormant
Active
Extinct
Magma
Crater
Plate
Core
Vent
Cone
Shield

Story: Time for Kids: Our Government
Law
Congress
Legal
Rules
Amendment
Presentation

Story: Time for Kids: Open Wide, Don't Bite
Patients
Broad
Skills
Operate
Reptiles
Healthy
Fangs

Story: Cleaning Up America's Air
Dimension
Thickness
Distinguished
Landscape
Trifle
Unique

Story: How to Think Like a Scientist
Atmosphere
Injured
Collision
Reliable
Uneven
Data
Cycle

Story: Legend of the Blue Bonnet
Famine
Drought
Sacrifice
Shaman
Possession

Story: The Cactus Hotel
Discovered
Insects
Remains
Ribs
Tough
Treat

Story: Time for Kids: Watercycle
Watercyle
Condensation
Evaporation
Groundwater
Precipitation
Runoff
Collection

Story: Time for Kids: Tornado Chasers
Severe
Predictions

Detect
Destruction
Reliable
Stadium

Story: The Last Summer with Maizon
Essay
Desolate
Exaggerated
Recite
Accompany
Terminal
Fidgeted
Somberly
Tokens
Eavesdropping
Beckoned
Illegible

Story: Time for Kids: The Human Body
Neuron
Impulse
Gland
Endocrine gland
Alveoli
Enzyme
Pathogen
Hormone
Antibody

Story: An Island Scrapbook
Barrier
Fireball
Naturalist
Parallel
Teeming
Emerge

Story: Everglades
Plentitude
Peninsula
Environment
Pondered
Scurried
Multitude
Eons

Story: Tales of a Fourth Grade Nothing
Present
Solution
Schedule
Project
Committee
Arranged
Method
Cooperation

Story: Encyclopedia Brown and the Case of the Disgusting Sneakers
Champion
Lead
Judges
Defeat
Rival
Sponsors
Title
Snack

Appendix D - Usage of Vocabulary Strategies in the IBA Intervention

The IBA Intervention promoted explicit connections before, during, and after the vocabulary lesson through the use of a variety of strategies: Dots, Word Splash, Vocabulary Quilt, Linking Language, U-C-Me, Mind Map, Vocabulary Foldables, and Rivet Books (Beers, 2003; Buzan, 1989; Cunningham et al., 2000; Herrera, 2007; Herrera, Kavimandan, Perez, & Wessels, 2008; Montano-Harmon, 2001). The vocabulary strategies used reflect the current literature and are specifically designed to increase CLD students' engagement through social and academic collaborations with their grade-level peers. However, throughout implementation of the IBA Intervention, certain vocabulary strategies were used by the grade-level teachers more often than others. Table 0.1 list the vocabulary strategies of the IBA Intervention from most to least used.

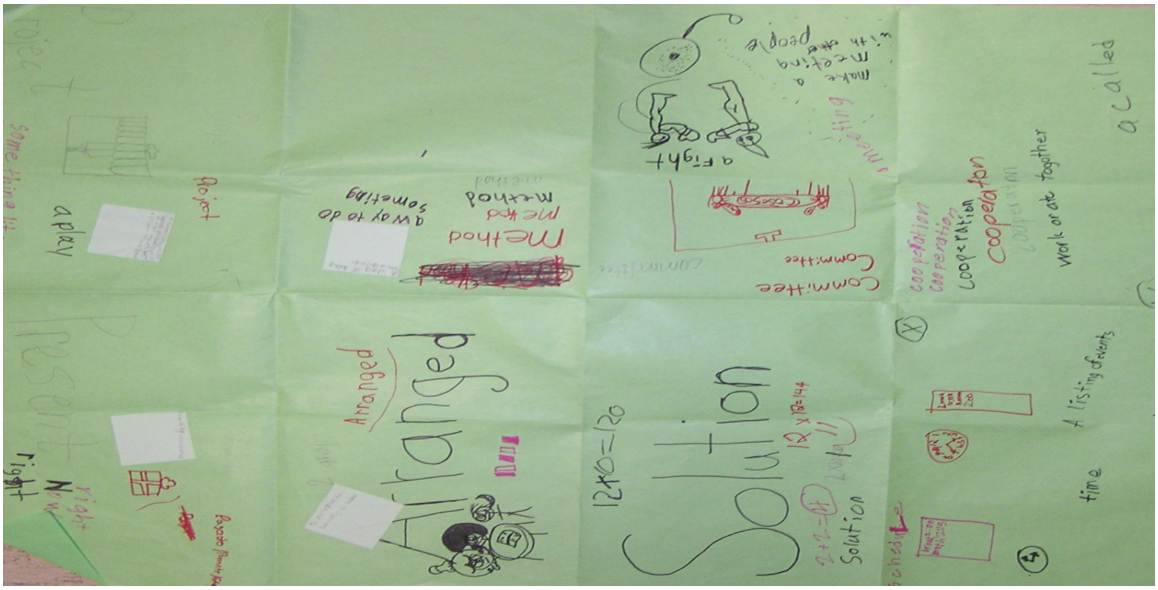
Table D.1 *Vocabulary Strategies Used Throughout the IBA Intervention*

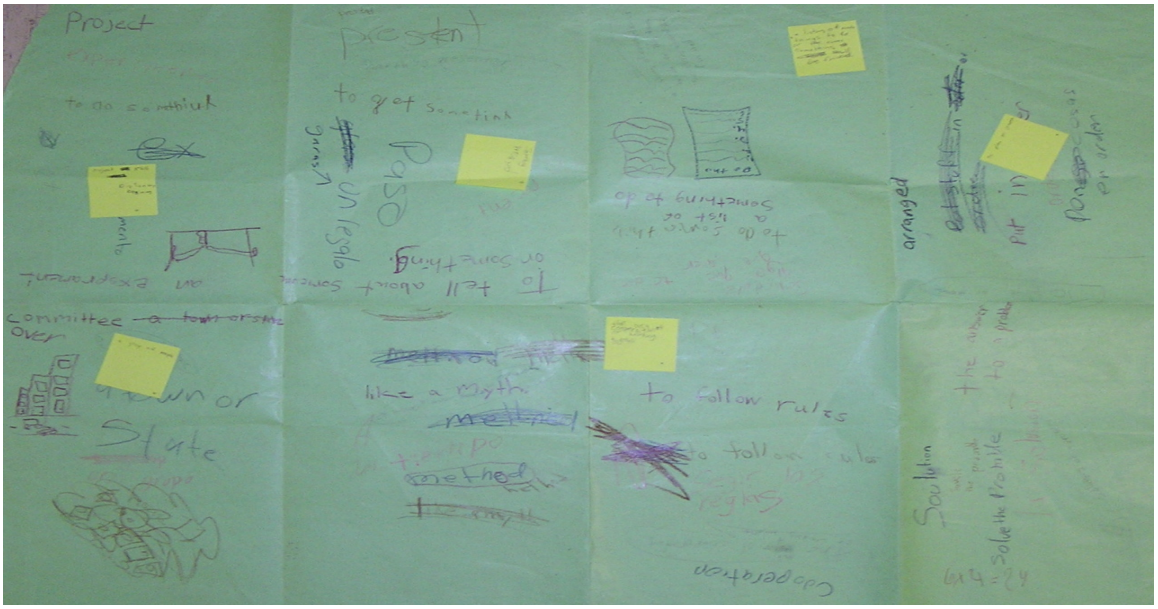
IBA Vocabulary Strategy	Number of Implementations
Vocabulary Quilt	Twelve
Vocabulary Foldable	Ten
Mind Map	Five
Word Splash	Five
DOTS	Five
Rivet Books	Three
Linking Language	Three
U-C-Me	One
Tic-Tac-Tell	One

Appendix E - Pictures of Students' Work Artifacts

Vocabulary Quilt

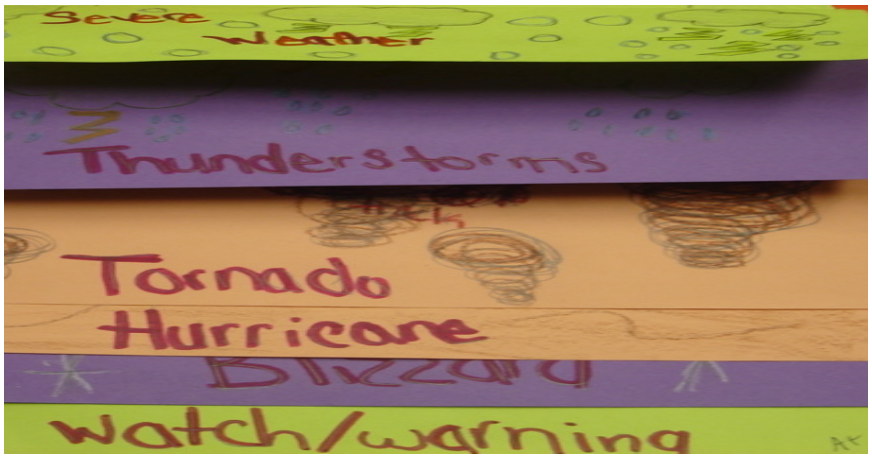
The following are pictures of CLD students' vocabulary quilt work artifacts finalized by small groups in the "after" phase of vocabulary instruction. The students' initial understandings of the targeted vocabulary words are directly written in each vocabulary word square. The sticky notes located on the vocabulary quilt document the students' final understanding of the vocabulary words.





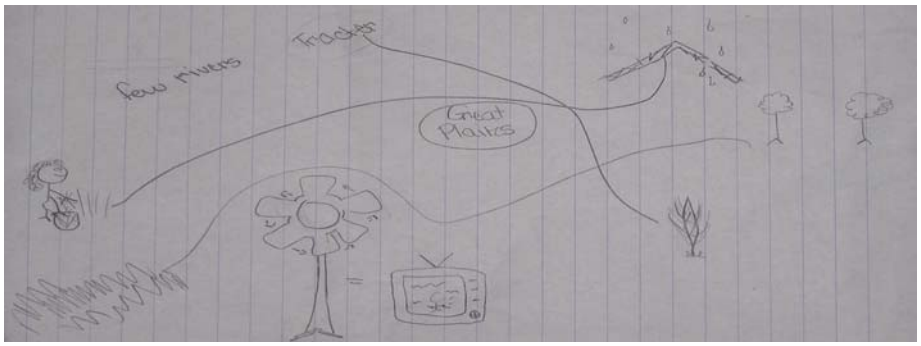
Vocabulary Foldable

The following picture illustrates an individual CLD student's vocabulary foldable work artifact from the "after" phase of vocabulary instruction. The student's initial understandings of the targeted vocabulary words are directly written or drawn on the pages labeled with the vocabulary words. As the student progressed through instruction of the vocabulary words, he/she continually added new information or changed his/her original understandings of the vocabulary words directly on the foldable.



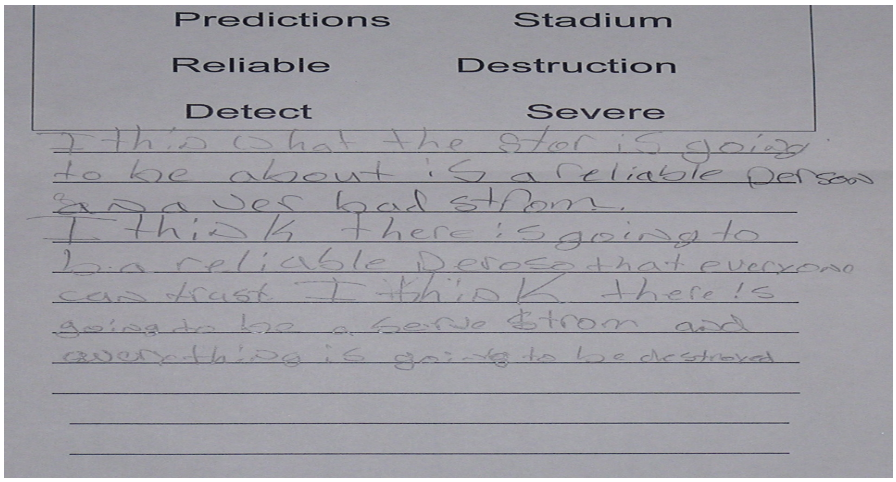
Mind Map

The following picture depicts a CLD student's mind map work artifact from the "before" phase of vocabulary instruction. The student's initial understandings of the targeted vocabulary term are expressed using both linguistic and non-linguistic representations. As the student progressed through instruction of the vocabulary term, he/she continually added new information or changed his/her original understandings of the vocabulary term directly on the mind map.



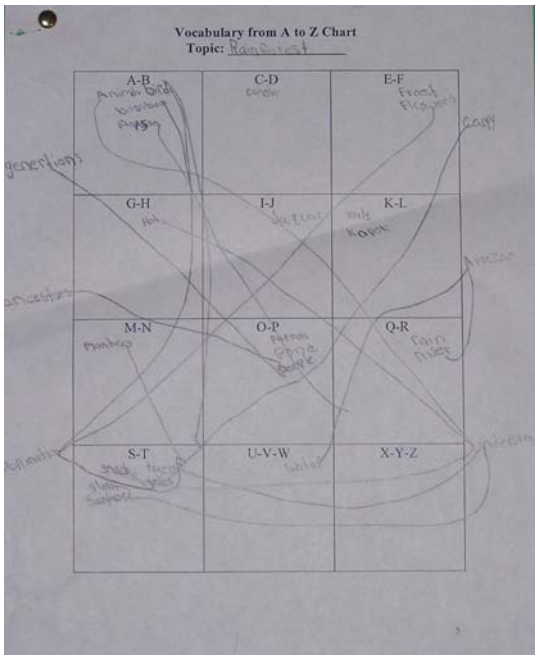
Word Splash

The following picture illustrates a CLD student's word splash writing sample in the "before" phase of vocabulary instruction. The student wrote a predictive paragraph using the new vocabulary words in relation to what he/she thought the words meant and what the story from the anthology could possibly be about. As the student progressed through instruction of the vocabulary words, he/she revisited his/her original prediction paragraph to build, clarify, or extend understandings of the new vocabulary words.



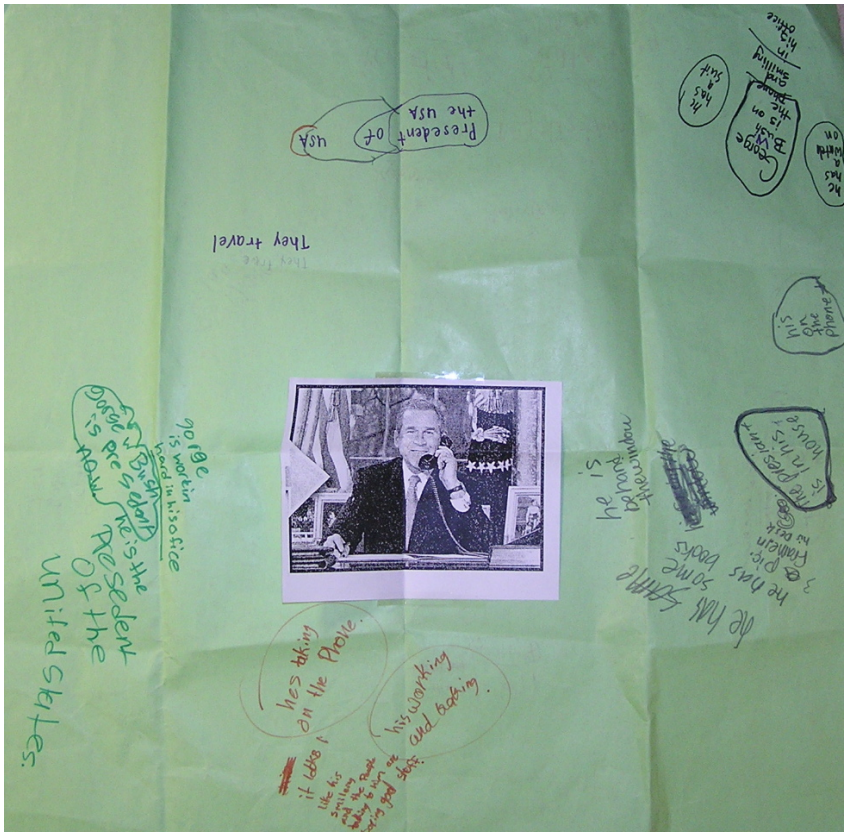
DOTS

The following picture depicts a CLD student's DOTS work artifact from the "after" phase of vocabulary instruction. Topic-related words from the student's background knowledge are directly written in each alphabet-lettered square. The student could express his/her understandings using linguistic or non-linguistic representations. The student wrote the targeted vocabulary words along the outside of the DOTS chart. The student then made connections between his/her existing knowledge and the vocabulary words.



Linking Language

The following picture illustrates the linking language work artifact created by a small group of CLD students in the “before” phase of vocabulary instruction. The students’ initial understandings of the targeted vocabulary words could be expressed using either linguistic or non-linguistic representations. As the students progressed through instruction of the vocabulary words, they continually added new information or changed their original understandings of the vocabulary words directly on the linking language poster.



Appendix F - Copy of Researcher's Fieldnotes

(*) around the world game (*) (high engagement)
- 2 people fall off
Directions
teacher hold cards - 1st person to define/say answer wins and other person has to sit down - (next person is the next person in the seaty order) - winner must take on everyone - (prefix/suffix)
(*) tape on floor - behind the white line -

Scribe
- Teacher read alaut - 2nd Book (Lion witch wardrobe)
↳ Child somewhat listeny/off task
Prince of Casper (?)

[Independent writing Skills]

[redacted] teachable moment

responses from Student
- spend more time at school then at home
- Harry Potter
- away from home
- people send children because they do not want to be with them

(*) Salomon - / Salman
why they curl pronaucy