An Analysis of English Language Learning Instruction Provided in Teacher Education and Inservice Training Programs for General and Special Educators

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AN ANALYSIS OF ENGLISH LANGUAGE LEARNING INSTRUCTION
PROVIDED IN TEACHER EDUCATION AND INSERVICE TRAINING
PROGRAMS FOR GENERAL AND SPECIAL EDUCATORS

By

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ABSTRACT

An Analysis of English Language Learning Instruction Provided in Teacher Education and In-service Training Programs for General and Special Educators

by

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It is essential that English language learners (ELLs) are able to effectively receive an education. Recent national data indicates that the achievement gap between English and non-English learners in school is approximately a two grade-level difference (NCES, 2012). The increase of students who are learning English and who have a disability is a challenge for schools in terms of curricula adjustments, to meet the needs of this population. (Artiles & Ortiz, 2002).

The need to prepare general and special educators to provide appropriate instruction to ELLs is crucial for positive learning outcomes (Shyyan et al., 2008; Youngs & Youngs, 2001). Research supports consistency in the provision of instructional strategies for ELLs with disabilities (Ochoa and Cadiero-Kaplan (2004); Gersten, et al., 2007).

The goal of this study was to examine the type and level of training in English Language Learning strategies provided to special and general educators in their teacher education programs and school-based inservice training. The study was conducted in the Colleges of Education at 13 universities across the United States. A questionnaire that contained 36 items was used in this study and broken down into five groups (a) language
development, (b) sheltered instructional models, (c) reading strategies, (d) math strategies, and (e) science strategies.

The results of this study indicate a lack of inservice instruction provided to general education teachers in the areas of English language learners and reading, math, and science strategies. In addition, both general and special education teachers report a lack of knowledge in the area of English language learning sheltered instructional models. This study raises the concern that general and special education teachers are not adequately prepared to provide English language learners appropriate instruction within a classroom setting.
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Dedicated to our beautiful Angels, our Daughters, who can see that with perseverance and God’s grace dreams do come true:

Rosalia A. Sedano

and

Andrea V. Sedano
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CHAPTER ONE
INTRODUCTION

The demographic profile of the United States is changing (U.S. Census, 2010). This change involves an increase in the population of a variety of groups. For example, between 2000 and 2010, the Hispanic population grew by 43%, to 50.5 million people in 2010 (U.S. Census, 2010). This has resulted in the enrollment of Hispanic students in public schools increasing to 6% of the school-age population (U.S. Census, 2010).

This demographic shift has led to an increase in students who begin school, from all age and linguistic groups, who speak a language other than English. The number of students who do not speak English upon entering school has increased from 4.7 to 11.2 million from 1980-2009 (NCES, 2012). Seventy-six percent of all English language learners (ELLs) speak Spanish and are considered Latino/Hispanic (Capps, Fixx, Ost, Reardon-Anderson, & Passel, 2004). The top ten languages spoken by ELL students are Spanish, Vietnamese, Chinese, Arabic, Hmong, Haitian, Korean, Tagalog, Russian, and Somali (U.S. Department of Education, 2010).

The school-age population also has undergone a demographic shift in the number of students from diverse groups being referred to special education. For example, 9% of all students served under Individuals with Disabilities Education Improvement Act (IDEA) (2004) in 2007 were Hispanic students for whom English was not their first language. This has resulted in a concern being expressed for the overrepresentation of these children/youth in special education programs (Hosp & Reschly, 2004). The U.S. Department of Education (2008) reported that Hispanic students were 1.5% more likely to be identified as having a hearing disability, 54.8% more likely to be identified as
having a learning disability, 1.2% times more likely to be identified as having an orthopedic disability, and 6.6% more likely to be identified as having other health impairments than all other racial or ethnic groups combined. However, these students are not overrepresented in programs for students with gifts and talents, intellectual disabilities, or emotional behavioral disorders. These data are compounded when a language difference is involved, with 16% of all Hispanic children/youth who speak a language other than English at home experiencing extreme difficulty learning to speak English (NCES, 2012).

Because language has a profound impact on academic learning, problems with language must be addressed with effective educational strategies, particularly when the child/youth has a disability (Echevarria, Short, & Powers, 2006; Hart, 2009). Not addressing the impact of language on academic achievement can lead to grade retention, high dropout rate, special education placement, and increased academic problems (Bowman-Perrott, Herrera, & Murry, 2010; Gersten, et al., 2007). Under the No Child Left Behind Act (NCLB)(2001), all teachers (general and special) are responsible for ensuring that students are provided appropriate instruction in state content standards and meet high levels of achievement to the greatest extent possible. Thus, the importance of training educators to meet the instructional needs of an increasing group of school-age children/youth is necessary. Problems with language and its impact on academic instruction must be met with effective educational strategies (Hart, 2009).

**English Language Learners Defined**

English language learners are those whose predominant language is one other than English (Diaz-Rico, 2013; NCES, 2012). Often, a language difference may lead to
difficulty in speaking, reading, and writing in the English language as well as poor overall academic achievement (Bowman-Perrott, Herrera, & Murry, 2010).

The literature describes three types of English language learners: (a) newly arrived learners who have adequate formal schooling, (b) newly arrived learners with limited formal schooling, and (c) long-term English language learners (Freeman & Freeman, 2003; Olsen & Jaramillo, 1999; Ruiz-de-Velasco & Fix, 2000). Research indicates that the newly arrived learners with limited or no formal schooling and the long-term English language learners will struggle to reach academic goals over time (Freeman & Freeman, 2003; Olsen & Jaramillo, 1999).

**Newly Arrived Learners with Adequate Formal Schooling**

Students who arrived in the United States less than five years ago and have previous adequate schooling typically function on grade level in reading and writing in their native language (Freeman & Freeman, 2003). Because these children/youth already understand the constructs of reading and writing in their first language, the transition to reading and writing in English moves more smoothly (Olsen & Jaramillo, 1999). They are able to transfer their prior academic skills into the English academic language (Collier, 1995; Cummins, 1983).

**Newly Arrived Learners with Limited Formal Schooling**

Many children/youth arrive in the United States with interrupted or limited schooling in their home country (U.S. Census, 2010). These students have been in the United States less than five years and, typically, arrive with limited native-language literacy as well as few math skills (Freeman & Freeman, 2003). School problems result not because the students cannot learn, but simply because they did not have structured
opportunities to attend school in their home country (Olsen & Jaramillo, 1999). These children/youth often struggle to learn and master English academics (Ruiz-de-Velasco & Fix, 2000).

**Long-Term English Language Learners**

Students who are long-term English language learners have been in the United States seven years or more and are still below grade level in reading and writing in English (Freeman & Freeman, 2004). Often, these students achieve good grades, but score low on standardized assessment tests (Ruiz-de-Velasco & Fix, 2000, NCES, 2012). Research indicates that these students may be proficient in conversational English, but struggle with the academic language of the classroom (Cummins, 1999; Collier, 1995). This dichotomy may be due to inconsistent or poor instruction since their arrival in the United States (Olsen & Jaramillo, 1999; Ruiz-de-Velasco & Fix, 2000). It also may be due to a lack of content knowledge and a limited English academic vocabulary (Freeman & Freeman, 2004).

The development of ELL teaching skills is critically needed in the field of education, particularly special education, as more and more students for whom English is not their primary language are being identified as having disabilities (NCES, 2012). In 2007, the U.S. Department of Education established the Office of English Language Acquisition, Language Enhancement, and Academic Achievement (OELA) to develop policy and program recommendations to improve the professional development of teachers (preservice and inservice) to work with students learning to speak English. However, the improvement of learning for ELL students is not one that teacher education programs address adequately (Short & Fitzsimmons, 2008). If the ultimate goal is to
improve student outcomes and narrow the achievement gap for English language learners, teacher education must provide effective and relevant instruction from preservice to inservice so that all educators develop core competencies in addressing the learning needs of this unique population of students.

**English Language Learners with Disabilities**

Because approximately 9% of all children/youth with disabilities also are learning English and because there is a disproportionate number of English language learners (ELLs) represented in high incidence disability categories, it is important to consider language when identifying an ELL student as having a disability (Sullivan, 2011; Zehler, et al., 2003). This becomes particularly important in the academic areas of math, language arts, and science (Kleinert, Cloyd, Rego, & Gibson, 2007).

**Mild to Moderate Disabilities**

Disproportionality in special education has been a concern for approximately four decades (Sullivan, 2011). The issues with disproportionality are not only with identification, but with placement. English language learners tend to be overrepresented in high-incidence categories such as learning disabilities, mild intellectual disabilities, emotional disabilities, and speech language disabilities (Sullivan, 2011; Klingner & Artiles, 2003; Artiles, Rueda, Salazar, & Higareda, 2005).

A large number of English language learners who receive special education services are diagnosed with a learning disability in the area of reading (Klinger & Artiles, 2006). Unfortunately, it is difficult to determine if these students actually have a learning disability or have the difficulties associated with the process of second-language acquisition (Klinger, Artiles, & Barletta, 2006; Klinger & Artiles, 2006). English
language learners with disabilities spend the majority of their school day in a separate setting, typically a resource room or self-contained classroom (Sullivan, 2011). This is problematic in that special educators do not have extensive training to work with ELLs with disabilities (Baca & Cervantes, 2004; Artiles & Ortiz, 2002).

**Moderate to Severe Disabilities**

There is little research concerning language instruction for English language learners with moderate to severe disabilities (Mueller, Singer, & Carranza, 2006). Students who are diagnosed as having a moderate to severe disability (e.g., intellectual disabilities, learning disabilities) often experience difficulties with language acquisition, expressive language, and communication in general. This is compounded when the child/youth is attempting to learn a new language (Huer, 2002). Often, the language spoken at home is not English (Mueller, Singer, & Grace, 2004).

Because language learning must be ongoing and integrated throughout all instruction for students with moderate to severe disabilities and must consider the home language and culture, it is imperative that educators receive more training in English language learning (Mueller, Singer, & Carranza, 2006). For students with moderate to severe disabilities, this need is even greater if they are to develop core competencies needed to transition from school to life beyond the boundaries of school (e.g., work, independent living) (CITEd., 2009). The goal must be to increase communication skills whether orally or through the use of augmentative systems (Huer, 2002; Mueller, Singer, & Carranza, 2006).
School Success for English Language Learners

English language learners are the fastest growing population in public schools (U.S. Census, 2010). It is predicted that students who are English language learners (ELLs) will increase by 10 million by to approximately 22 million by 2025 (NCES, 2012). This translates into one out of every four students being an English language learner (NEA, 2008). Currently, there is an achievement gap between English and non-English learners in school, with an average gap of 20 points on math and reading assessments, which is approximately a two grade-level difference in both subjects (NCES, 2012). English language learners are less likely than English-speaking students to score at or above the proficient level in math and reading/language arts (NCES, 2012). Thus, the longer a student is in school, the further they get behind without appropriate instructional strategies being implemented (Ballantyne, Sanderman, & Levy, 2008; Klingner, & Vaughn, 1996).

English Language Learning Instruction in Teacher Education

Teachers play a crucial role in the lives of children/youth. The prevention of school failure can be directly attributed to educators who create a school climate that fosters academic success (Cummins, 1989a). It is mandated that educators use scientifically-validated methods to adequately educate ELL students in academic content (IDEA, 2004). However, educators struggle to distinguish between linguistic and cultural differences, particularly when a student has a disability (Ortiz, Wilkinson, Robertson-Courtney, & Kushner, 2006. This is compounded when the student does not speak English and the achievement gap is widened (Artiles & Ortiz, 2002). Current research indicates that a contributing factor may be the lack of teacher training in the area of
appropriate strategies to teach English language learners, particularly those with disabilities (Ortiz, 2001; Sullivan, 2011; Keller-Allen, 2006).

**Special Education**

Historically, the courts have played a key role in the advocacy of education rights and equity for English language learners. In Lau v. Nichols (1964), the U.S. Supreme Court ruled that schools have a legal obligation to address both the language and curricular needs of ELLs. Later court rulings mandated that education of students learning English must be based on sound educational principles, implemented adequately, and evaluated for effectiveness. However, research in the field of special education continues to document that assessments for English language learners with disabilities contributes to the over identification of this group of students (Abedi, 2004; Sullivan, 2011). Given the increased likelihood that special educators will have a student with a disability who is learning English in their classroom, the strengthening of their teacher preparation is essential (Ballantyne, Sanderman, & Levy, 2008; Office of Special Education Programs, 2001). The Center for Applied Linguistics Working Group on ELL Policy (2010) indicates that there is insufficient attention being paid to the training and professional development of special educators concerning limited English proficiency and how to address it among linguistic diverse populations. This lack of attention is limiting educator effectiveness in the classroom. This is corroborated by reports from special educators concerning their lack of training to work with ELL students with disabilities (Mueller, Singer, & Grace, 2004). Thus, teacher education programs and school districts must meet the need of these special educators in order to provide
appropriate training and professional development opportunities for the current reality in schools and for the changing demographics predicted for the coming years.

**General Education**

The Elementary and Secondary Education Act (ESEA) (2001) prohibits ELLs from being removed from core academic content instruction. Thus, the primary responsibility for core content instruction for students learning English falls to the general educator. However, research indicates that teacher education and school-based inservice training is not providing the skills necessary for general educators to meet this requirement (Leos & Saavedra, 2010). General educators report that they feel unprepared to work with ELLs and indicate that they needed more training to be effective with this growing population of learners in their schools (Reeves, 2006).

This lack of training is due to the fact that only 20 states require all general education teachers to complete any coursework on working with ELLs (Ballantyne, Sanderman, & Levy, 2008). Of those who did complete coursework, only 27% said they were “very well prepared” to meet the needs of ELLs and 12% indicated that they were “not prepared at all” (NCES, 2001). This illustrates the continued call in the research for training English language learning in teacher education and school-based inservice training (Grant & Wong, 2003).

**Inservice Training**

While most general education teachers have at least one ELL student in their classroom, only 29.5% report receiving any inservice or professional development once they begin teaching (Ballantyne, Sanderman, & Levy, 2008). This in light of an increasingly large body of research that establishes the impact of teacher training once
the educator is employed (Darling-Hammond, 2002). The research indicates that often school-based professional development translates more readily into classroom application by the teacher and allows teachers to share their ideas and provide support to one another (Walqui, 2006). However, school districts are not providing school-based inservice training in sufficient quantities to impact the academic or language learning of ELL students (Short & Fitzsimmons, 2008).

There is a growing need to close the achievement gap between ELL students and their native English-speaking classmates. It appears that one method to close this gap is to provide educators with a strategies toolkit that would provide evidence-based interventions to meet the academic and language needs of this growing population of students. It is imperative that special and general educators are provided with the appropriate training in their preservice teacher education programs and inservice school-based training to ensure that success of the English language learners who reside within their care.

**Statement of the Problem**

The number of children/youth for whom English is not their first language is rising in the United States as well as the number of ELL students with an Individualized Education Plan (IEP) (Klingner, Artiles, & Barletta, 2006). This emphasizes the achievement gap between students learning to speak English and those for whom English is their native language (Artiles, Rueda, Salazar, & Higareda, 2005).

Increasingly, educators (general and special education) are called upon to work with children/youth who do not possess the English skills to learn academically in the classroom (Artiles & Ortiz, 2002). Yet, teachers report that they do not have adequate
training to provide appropriate educational services for these students (NCES, 2004). Research also indicates that educators harbor negative attitudes toward students who are learning English (Reeves, 2006). These educators indicate that English language learners increase their workload and that the educators have not been professionally prepared to work with ELLs (Youngs & Youngs, 2001; Durgunoglu, & Hughes, 2010). These attitudes and fears have an impact on the quality of instruction provided to these students (Karabenick & Noda, 2004). Because English language learners should be provided the same level of instruction as students for whom English is their first language, it is imperative to ascertain the level and type of instruction provided to all educators while they are in their preservice education program and their inservice professional development once employed. Without the proper instructional tools, teachers will be unable to provide appropriate instruction to students learning to speak English and these students will continue to fall further and further behind academically. If the goal is to provide equitable education to all, educators must be prepared to meet the unique challenges of this particular group of students.

The purpose of this study was to examine the type and level of training in English language learning strategies provided to special and general educators in their teacher education programs and school-based inservice training. The study was conducted at 13 universities across the United States. The questionnaire used in this study was developed using information from the report of the National Center on Educational Outcomes (2004), *Educator Perceptions of Instructional Strategies for Standards-based Education of English Language Learners with Disabilities. (ELLS with Disabilities Report 7)* (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004). The report analyzed data from teachers
and the research literature in the areas of reading, math, and science to identify strategies that were educationally effective for ELL students as well as strategies educators believed they would implement. The final questionnaire incorporated the top ten areas identified (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004) as well as the categories of language development (Cummins, 1999) and sheltered instructional models (Short, Echevarria, & Richards-Tutor, 2011). The paper questionnaire was translated into an online format.

Specifically the study addressed the following questions:

**Research Question 1:** Do special education teachers receive more training in the English language learning categories of language development than general education teachers in their preservice education program?

**Research Question 2:** Do special education teachers receive more training in the English language learning categories of language development than general education teachers in their inservice training?

**Research Question 3:** Do special education teachers receive more training in the English language learning sheltered instructional models than general education teachers in their preservice education program?

**Research Question 4:** Do special education teachers receive more training in the English language learning sheltered instructional models than general education teachers in their inservice training?

**Research Question 5:** Do special education teachers receive more training in the English language learning reading strategies than general education teachers in their preservice education program?
Research Question 6: Do special education teachers receive more training in the English language learning reading strategies than general education teachers in their inservice training.

Research Question 7: Do special education teachers receive more training in the English language learning math strategies than general education teachers in their teacher preservice education program?

Research Question 8: Do special education teachers receive more training in the English language learning math strategies than general education teachers in their inservice training?

Research Question 9: Do special education teachers receive more training in the English language learning science strategies than general education teachers in their preservice education program?

Research Question 10: Do special education teachers receive more training in the English language learning science strategies than general education teachers in their inservice training?

**Significance of the Study**

Currently, there is little research to examine effective instructional strategies for students learning English, particularly for those with disabilities (Baca & Bransford, 1981; Gersten, Baker, & Marks, 1998; Klingner, Artiles, & Barletta, 2006). Conversely, there is little information on how educators are being trained to work with this unique population of students (Reeves, 2006). With the national focus on raising standards for all students, it is imperative to ascertain the type and level of training educators have received to work with ELL students. General education and special education teachers
must be trained in research-based strategies if the achievement gap is to be closed for ELL students. From the data generated from this study, teacher education programs as well as school-based inservice programs can develop and provide appropriate training for teachers as they work with this growing population of students.

**Definitions**

**Adjusted speech.** Speech patterns changed by the teacher to assist in increasing academic comprehension (Shyyan, Thurlow, & Liu, 2008).

**Basic interpersonal communication skills (BICS).** The language necessary for day-to-day living, this includes conversations with friends and informal interactions. The BICS usually takes about six months to two years to acquire (Cummins, 1999).

**Chunking and questioning aloud (reading mastery).** A story is read to the student, the teacher pauses after reading a block of text and asks specific questions (Peregoy & Boyle, 2013).

**Cognitive academic language learning approach (CALLA).** The CALLA model incorporates cognitive learning theory and integrates academic content instruction with explicit teaching of learning strategies. The CALLA method consists of a five-stage cycle of instruction: preparation, presentation, practice, evaluation, and expansion (Chamot & O’Malley, 1994).

**Cooperative learning.** A small group of students working together to obtain a goal or an activity (Peregoy & Boyle, 2013).

**Curriculum-based oral reading probe.** Students are given a reading passage to read orally for one minute. Errors are recorded. Then, the teacher asks questions to check
for comprehension and continues until the students reach the level of frustration. The median score determines the student’s literacy rate (Friend, & Bursuck, 2012).

**Daily re-looping of previously learned material.** Students are made aware of the previous topics or concepts taught and how they relate to the new concept (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004).

**Direct instruction.** The process of explicit teaching aimed at teaching a particular skill or strategy to improve access to academic content (Peregoy & Boyle, 2013).

**Direct teaching vocabulary through listening, seeing, reading, and writing in short-time segments.** Students develop vocabulary through listening, speaking, reading, and writing (Gersten, Baker, Shanahan, Linan-Thompson, Collins, & Scarcella, 2007).

**English language learners.** Students who are learning to speak English and whose native language is not English (Diaz-Rico, 2013; Diaz-Rico, 2012a).

**English language learners with a disability.** Students who are learning to speak English, whose native language is not English and who receives special education services (Diaz-Rico, 2013).

**Explicit timing.** The teacher hands out a worksheet to students and they are told to complete the worksheet in a short time frame. Students are told to stop after a given time frame and underline the last number written. The teacher restarts the stopwatch and the process is repeated three times. The teacher collects the worksheets and evaluates the rate in responding (Baca & Cervantes, 2004).

**Fluency building (high frequency words).** Students practice repeated reading by using a short passage or assessment that builds on increasing high-frequency words (Friend & Bursuck, 2012).
Graphic organizers (e.g., semantic maps, story maps, concept maps, or word problems). A strategy used to visually facilitate organization of information, problem solving, planning, or decision making (Gersten, Baker, & Marks, 1998).

Guided language acquisition design (GLAD). The GLAD model assists teachers in providing a classroom with language-rich academic content. It consists of five components: focus/motivation, comprehensible input, guided oral practice, reading/writing, and closure (O’Donovan 2008).

Hands-on, active participation: Students are directly involved in exploring, discussing, discovering, and reflecting on difficult concepts (Baca & Cervantes, 2004).

Incidental instruction. When the educator has not prearranged instructional focus, rather the instruction comes naturally with no advance preparation (Basturkmen, Loewen, & Ellis, 2004).

Inservice training. Professional development training offered through a school district to contracted licensed employees (Reeves, 2006).

Learning disability. A disorder in one or more of the basic psychological processes that can interfere in understanding or using language (spoken or written), listening, thinking, speaking, reading, writing, spelling, or math operations (IDEA, 2001).

Learning strategies. Determined approach for utilizing systems, designs, procedures, or maneuvers to assist with acquiring information (Diaz-Rico, 2012b).

Modeling/teacher demonstration. Teaching through the use of examples or experiments. Students watch and learn before conducting their own experiment (Diaz-Rico, 2013).
**Nationwide.** A sample of teacher training programs from across the United States. The following universities participated in the study: (a) Arizona State University, (b) California State University, Fullerton, (c) California State University, Monterey Bay, (d) Eastern Illinois University, (e) Emporia State University, (f) San Diego State University, (g) Southern Connecticut State University, (h) St. Cloud State University, (i) University of Georgia, (j) University of Massachusetts, Amherst, (k) University of Nevada Las Vegas, (l) North Carolina, Greensboro, and (m) Wichita State University.

**Peer tutoring.** Students work in pairs and collaborate in learning and practicing science content (Greenwood, Arreaga-Mayer, Utley, Gavin & Terry, 2010).

**Practicing paraphrasing and retelling strategies.** Paraphrasing is when students describe in their own words what they read. Retelling is sharing orally what they read to another student (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004).

**Pre-, during, and post-reading strategies.** Students are taught to use strategies to increase comprehension when reading text (Peregoy & Boyle, 2013).

**Problem-solving instruction and task analysis strategies.** A process of analyzing and prioritizing sequential, mathematical equations to solve the problem (Díaz-Rico, 2012).

**Reciprocal peer tutoring (RPR) to improve mathematics achievement.** Students work in pairs during math instruction with one student being the tutor. They establish team goals and monitor their own reward system (Greenwood, Arreaga-Mayer, Utley, Gavin & Terry, 2010).
Relating reading to student experiences. Students are given reading content and asked to discuss their personal experiences related to the content (Peregoy & Boyle, 2013).

Sheltered instruction observation protocol (SIOP). This model is used to make grade level academic content accessible to ELLs while promoting English language development. The SIOP model consists of 30 instructional strategies that are grouped into eight components: preparation, building background, comprehensible input, strategies, interaction practice/application, lesson delivery, and review/assessment (Short, Echevarria, & Richards-Tutor, 2011).

Specially designed academic instruction in English (SDAIE). The SDAIE model provides ELLs access to the curriculum while developing the English language. The SDAIE is used with ELLs who are in the intermediate-level of knowledge in English. The SDAIE method consists of five components: teacher attitude, content, connections, comprehensibility, and interaction (Díaz-Rico, 2012).

Specific informal assessments based on curriculum (curriculum-based probe math). Math probes are used to monitor student progress in acquiring skills. Students are given worksheets with math problems to solve in one-minute timing. Then the teacher uses the median score to determine the student’s instructional math level (Friend & Bursuck, 2012).

Specific informal assessments based on curriculum (curriculum-based probe reading). Students are given a reading passage read orally for one-minute. Errors are recorded. Then, the teacher asks questions to check for comprehension and continues
until the student reaches the level of frustration. The median score determines the student’s literacy rate (Friend & Bursuck, 2012).

**Student think-alouds.** The student verbalizes his/her thought processes aloud on how to solve a math problem before beginning to work on a specific math equation (Peregoy & Boyle, 2013).

**Tactile concrete experiences in mathematics.** The use of manipulatives (objects, blocks, coins) to recreate math concepts (Baca & Cervantes, 2004).

**Teacher education.** The training of individuals in a higher education setting in the areas of general or special education (Reeves, 2006).

**Teacher questionnaire.** The purpose of this questionnaire is to examine the type and level of training in English language learning strategies provided to special and general educators in their teacher education programs and school-based inservice training.

**Teacher think-alouds.** The teacher verbalizes his/her thoughts by orally modeling the process of solving a problem before beginning to work on a specific math equation (Díaz-Rico, 2013).

**Use of organized pre-assessment strategies (e.g., KWL).** The teacher assesses through instruction a baseline and targets student learning gaps to be addressed (Echevarria, Short, & Powers, 2006).

**Use of short segments to teach vocabulary through listening, seeing, reading, and writing.** Instruction on specific vocabulary is implemented for a brief period of time through listening, seeing, reading, and writing (Gersten & Brengelman, 1994).
Using pictures to demonstrate steps. Students are given pictures or images on how to complete a project or experiment (Díaz-Rico, 2013).

Using pre-reading strategies in content areas. A strategy used before reading to activate prior knowledge, engage students, and focus on vocabulary words (Gersten & Brengelman, 1994).

Using response cards during instruction as a response to teacher questions. Students are given a sheet of paper to write the answers to questions that the teacher may ask (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004).

Using visuals. Using printable illustrations or objects as resources to deepen the understanding of the content (Baca & Cervantes, 2004).

Limitations

The limitations of this study were:

1. Data were collected via an online questionnaire, thus, the participation rate may have been low due to the lack of face-to-face contact with the participants.

2. The questionnaire required the participants to report their perceptions concerning the level of training they received (e.g., teacher education programs or inservice training). The participants may not have answered truthfully in order to portray themselves positively.

3. In order to increase participation, the questionnaire did not require the participants to provide information that could identify them (e.g., the state in which they reside, university, or the school district). Thus, in-depth analysis by region or university could not be conducted.
4. The questionnaire was developed using items from the report *Educator Perceptions of Instructional Strategies for Standards-based Education of English Language Learners with Disabilities* (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004). The reliability and validity of the resulting questionnaire was unknown.
 CHAPTER TWO

REVIEW OF RELATED LITERATURE

The number of students for whom English is their second language continues to grow in the United States (U.S.), with a 43% rise between 2000 and 2010 (U.S. Census, 2011). This increase of English language learners (ELLs), with and without disabilities, has challenged public education to develop and provide appropriate evidence-based education. There are many school systems that have not made the necessary adjustments to the curricula offerings and that do not require teachers to be qualified to meet the needs of ELLs (Artiles & Ortiz, 2002). This lack of teacher training can have profound and lasting negative effects on students learning English, both academically and socially (Ortiz, 2001; Sullivan, 2011; Keller-Allen, 2006).

The demographic shift in public education means that all educators, at some point in their teaching career, will encounter students who are not proficient in English (Ballantyne, Sanderman, & Levy, 2008). Because all teachers (general and special) are required by the No Child Left Behind Act (2001) to provide appropriate education, based on research, the training received by educators provides valuable information concerning the development of curricula and the use of effective instructional interventions with these children/youth (Shyyan, Thurlow, & Liu, 2008). Ignoring or not addressing the needs of English language learners can lead to grade retention, a high dropout rate, special education placement, and increased academic problems (Bowman-Perrott, Herrera, & Murry, 2010; Gersten et al., 2007).

The purpose of this study was to examine the level of training received by general and special educators concerning English language learning strategies in their teacher education programs and school-based in-service training.
English Language Instructional Models

Providing educators the necessary instructional programs and training is essential to ensure that all ELLs are provided access to the general education curriculum (Moughamian, Rivera, & Francis, 2009). However, research indicates that teachers have not been trained to work with ELLs and lack confidence when teaching these students (Reeves, 2006; Karabenick & Noda, 2004).

Several instructional models have been identified as being effective in assisting ELLs build their second language proficiency. These are: (a) Basic Interpersonal Communication Skills and Cognitive Academic Language Proficiency (BICS & CALP) (Cummins, 1981a), (b) Cognitive Academic Language Learning Approach (CALLA) (Chamot & O’Malley, 1987), (c) Specially Designed Academic Instruction in English (SDAIE) (Peregoy & Boyle, 2008), (d) Sheltered Instruction Observation Protocol (SIOP) (Echevarria, Short, & Powers, 2006), and (e) Guided Language Acquisition Design (GLAD) (O’Donovan, 2008). The models are based on a variety of educational philosophies and vary as to the amount of research that has been conducted on them. However, the five are the most frequently taught models in teacher education programs and implemented in school districts across the nation (Díaz-Rico, 2012).

Basic Interpersonal Communication Skills (BICS)

Children and youth who are learning English function in one of two levels of language proficiency (Cummins, 1980a). The two levels develop over time and are not mutually exclusive, although one level does rely on the other level for language proficiency (Cummins, 1981a).
Basic Interpersonal Communication Skills (BICS) is the first level of language learning and involves the informal language used in conversations. This is often referred to as playground language and involves the language ELLs acquire through informal interactions with their peers. Basic Interpersonal Communication Skills typically takes an ELL student from two to seven years to develop (Cummins, 1989a; Diaz-Rico, 2012b). The use of BICS with ELL students can be misleading to educators as students can dominate the surface level language skills and can conduct an intense conversation in English, however lack the academic language (CALP) needed to succeed in the academic classroom (Bylund, 2011). The proficiency of BICS is a necessary first step for ELL students to achieve in building the teacher student interaction and socialization process within the school and home (Cummins, 1989b).

Brenner (1998) conducted a study designed to investigate the mathematical communication of ELL students in two algebra classes with ELLs. The subjects selected were two college preparation classrooms from grades 9th through 12th. The school population was comprised of 50% Latino students.

The study was descriptive in nature and lasted six weeks of the academic year. The two college prep classrooms were videotaped for twenty hours, copies of the lessons and handouts collected, and all lessons videotaped. The data were analyzed by transcribing the videotapes verbatim. The transcription was chunked into mathematical incidents that varied in length, terms, and content. The transcription was examined for participant structure, the type of mathematical communication, and the language that was used in the interaction. This was done to ascertain patterns in the data. Results of the data analysis indicated that small group instruction with the ELL students resulted in the
development of stronger communication competence in BICS within an academic content area.

Brenner (1998) concluded that communication ability increased when students participated in classroom discussions. She maintained that classroom discussion done in small or large group format tends to serve many functions and was most beneficial for ELL students as the discussions assisted emergent ELLs with increasing their BICS. Brenner (1998) recommends time be provided for students to participate in classroom discussions to increase the quantity and quality of BICS.

Thomas and Collier (2002) conducted a five-year study to analyze the variety of educational services provided to language minority (LM) students in public schools and the resulting long-term academic achievement of these students. The study was conducted in five urban and rural school districts and encompassed the collection of 210,054 students. There were over 80 primary language represented in the sample, but the Spanish language group was the largest.

Qualitative and quantitative data were collected that included years of attendance, program type, and socioeconomic status, primarily language, second language proficiency upon entry, prior schooling, and standardized achievement scores. In addition, qualitative data were collected consisting of interviews, school visits, surveys, and source documents.

The quantitative data were analyzed using standardized measures in normal curve equivalence. All longitudinal data were analyzed separately and then all data were grouped together. Qualitative analyses were conducted using interviews, school visits, surveys, and source documents to identify patterns and themes. Results of the data
analyses indicated that the number of years of primary language schooling, either in home country or host country, had a greater influence than did socioeconomic status on student performance in school. In addition, the second language academic achievement of older ELLs with more schooling completed in their first language in their home country had less influence when the students lived in poverty. However, the more schooling they had in their native language, the higher their second language achievement.

Thomas and Collier (2002) found the qualitative themes that emerged indicated that quality programs for students learning English focused on long term bilingual instruction that led to reducing the achievement gap between ELL students and their English speaking peers. Programs that focused on short-term remedial solutions were not effective.

Thomas and Collier (2002) recommended that educators provide a sociocultural supportive school environment for ELLs that permits natural language (BICS), academic, and cognitive development that focuses in assisting with both first and second language acquisition.

Dockrell, Stuart, and King (2010) conducted a study to ascertain the efficacy of preschool oral language instruction for young students learning English. The participants were from three inner city preschool and spoke Bengali, Sylleti, Turkish, Amharic, and Samali. Eight of the children were monolingual and 28 were bilingual.

Dockrell et al. (2010) used a quasi-experimental design. One preschool used *Talking Time* (Dockrell et al., 2010), one used *Story Reading* (Dockrell et al., 2010), and the last preschool served as the control group in which no intervention was used. All students were given a pre- and post-assessment to assess non-verbal skills. The *Talking*
Time (Dockrell et al., 2010) participated in three activities, acting out, story talk, and the hexagon game. The Story Reading (Dockrell et al., 2010) group students were read picture books and stories repeatedly to build familiarity with content and language. The non-intervention group participated in their everyday curriculum.

The data were analyzed using a series of univariate ANCOVA’s with three levels of between-subject factors (e.g., Talking Time, Story Reading, and non-intervention groups). Results of the data analysis indicated that the use of Talk Time (Dockrell et al., 2010) had a significance effect on vocabulary, oral comprehension, and sentence repetition, but no significance with narrative skills. Story Time (Dockrell et al., 2010) performed better on language skills than the non-intervention group but lower scores than Talk Time (Dockrell et al., 2010). The non-intervention had no effect on language skills.

Dockrell et al. (2010) concluded that oral language interaction (BICS) can make a significant improvement in the oral language development of children learning English. In addition, children who struggle with the development of oral language need support in language development with their peers. They recommended that further research be conducted to examine the efficacy of more intensive interventions to improve the language skills of ELLs.

Cognitive Academic Language Proficiency (CALP)

The second language level to develop is Cognitive Academic Language Proficiency (CALP) (Cummins, 1980b). This level is comprised of the academic language used in school and involves students in understanding and expressing themselves orally and in writing (Cummins, 1980b). Cognitive Academic Language Proficiency typically takes an ELL from five to seven years to develop (Cummins,
Thus, an ELL is not ready to really begin learning academic material in English until they have mastered BICS and move well into the CALP level of language learning (Cummins, 1989a).

Cummins (1981b) conducted a study to reexamine data from the work of Ramsey & Wright (1974) that did not look at the length of residency (LOR) needed for students to acquire school language (CALP). The reanalysis consisted of 5,386 Canadian students, 1,210 were born outside of Canada and were ELLs.

The study compared younger and older learners on standard and absolute scores focusing on length of residence (LOR) in Canada. Two tests scores were used to measure English proficiency: (a) the Picture Vocabulary Test (PVT) (Ramsey & Wright, 1974), and (b) the English Competence Test (ECT) developed by the Toronto Board of Education (Ramsey & Wright, 1974).

The data were analyzed using the PVT and ECT scores using the mean of the total sample for each group and grade level. The results of the analysis indicated that the length of residency (LOR) had a significant impact on English oral and written language skills. In addition, the effects of residency (LOR) and age of arrival diminished over time.

Cummins (1981b) concluded that the study by Ramsey and Wright (1974) did confirm that older learners acquired cognitive/academic second language faster than younger students. In addition, the older students tended to acquire the second language sound discrimination and recognition of skills faster. The most important finding was that the number of years it takes ELLs to approach grade level norms in the second language (CALP) is at least five years after attaining BICS. Cummins (1981b) also confirms that psychological or educational assessments given to ELLs in their second language within
the first five-years in their host country underestimated their academic abilities. Cummins (1981b) recommended that educators consider a wide range of factors to determine second language acquisition by ELLs. These should include social, educational, affective, and cognitive factors.

Brown (2005) conducted a study designed to explore math achievement differences between third grade English language learners (ELLs) and English proficient students. The study used a literacy-based performance assessment to measure cognitive language proficiency (CALP). The test scores of third grade students living in Maryland were analyzed. The scores were from the Maryland School Performance Assessment in math. A total of 982 test scores were analyzed, 492 scores of ELL students and 490 English proficient students.

Brown (2005) used a random sampling design for the ELLs data and stratified random sampling for the scores of the English proficient student data. From the population data, four groups were identified for analysis: (a) ELL students who received free and reduced meals, (b) English proficient students who received free and reduced meals, (c) ELL students who did not receive free and reduced meals, and (d) English proficient students who did not receive free and reduced meals.

Data were analyzed using an Independent samples t-test and a multiple linear regression analysis. Results indicated that socioeconomic status had a significant impact on all students. The impact was greatest for English proficient students rather than ELLs. The high socioeconomic students who were English proficient performed better than the ELLs with high socioeconomic status. There were no differences for low socioeconomic status for ELLs or English proficient students on the math assessment.
Brown (2005) concluded that high socioeconomic status generally results in greater cognitive academic language proficiency (CALP) for students learning English. However, ELL students living in poverty struggled academically. Brown (2005) concluded that these students needed more time to develop grade-level academic English required to take large scale high stakes tests. She recommended at least three years to improve the academic English of ELLs before administering high stakes standardized tests.

Olson and Land (2007) conducted a study to examine the impact of a reading and writing cognitive strategies intervention on English language learners (ELLs). The participants were 94 teachers and 2000 students from nine middle and four high schools. The majority of the students were Latino, living in poverty, and learning English. The students were at the intermediate level of fluency as measured by the California English Language Development Test.

Olson and Land (2007) used a quasi-experimental design and gathered both quantitative and qualitative data. The quantitative data included a pre-and post-writing assessments, standardized measures of reading, language scores, and English placement rates. The qualitative data included teacher and student discussions of the quality of their experiences, metacognitive learning logs, and written reflections from 700 students.

The teachers were taught a variety of cognitive strategies to implement as they saw fit in their classrooms. The students were expected to apply the cognitive strategies, ask questions, make predictions, construct the meaning of the lesson, reflect, and evaluate.
The quantitative data were analyzed using a repeated measures ANOVA. The qualitative data were analyzed by examining the metacognitive logs and highlighting the representative responses indicating the strategies that worked best. Relevant themes were also identified from the student and teacher reflections.

Results of the quantitative data indicated students who participated in the cognitive instruction classrooms achieved higher writing scores than did the control students. Students in the cognitive strategy classrooms also passed the California High School Exit Exam with scores significantly higher than the control group. Results of the qualitative data analysis indicated that the students believed they could read and write better after instruction. It appeared that the confidence of the students increased and they indicated they felt they could achieve academically.

Olson and Land (2007) concluded that ELLs are most successful when teachers are trained to engage in sustained, high quality teaching, have high expectations for their students, expose students to a rigorous curriculum, employ a variety of strategies, and use guided practice to assist students with reading and writing. They also maintain, that teachers and students must work together as a learning community.

Olson and Land (2007) recommend that teachers engage ELL students in higher level thinking through discussions about texts, direct strategy instruction, modeling of strategies, and repeated practice and application of the skills with teacher coaching and feedback.

**Cognitive Academic Language Learning Approach**

The Cognitive Academic Language Learning Approach (CALLA) is an instructional model used with ELLs to increase achievement when they are taught in a
language in which they are not proficient. The CALLA model was developed by Chamot and O’Malley in 1986 and is focused on the use and application of cognitive and metacognitive strategies by ELL students (Chamot, 1996; Diaz-Rico, 2012a). The goal of CALLA is to develop the listening, reading, speaking, and writing skills needed in the classroom, as well as focus on explicit instruction in learning strategies (Chamot, 1995).

O’Malley, Chamot, Stewner-Manzanares, Kupper, & Russo (1985) conducted a study to explore the range of language learning strategies used by ELL high school students and if the strategies formed a framework for learning. The study also attempted to identify how students applied the strategies as they interacted with a language task or activity. The study implemented metacognitive and cognitive strategy training with the students focused on vocabulary, listening, and speaking skills. Participants in the study included 70 high school students enrolled in ELL classrooms and 22 teachers who provided instruction. The students and teachers were located in three high schools. The students were identified as having beginning, intermediate, or advanced levels of English proficiency. For this study, only students in the beginning or intermediate levels participated.

O’Malley et al. (1985) used three qualitative instruments to collect data: (a) a student interview guide, (b) a teacher interview guide, and (c) an observation guide. The data were collected for one month at the end of the school year. The students were interviewed in groups of 3-5 students during regular school hours. Teachers were interviewed individually for about 45 minutes during school hours. Classroom observation occurred daily for one hour.
The taped interviews were transcribed and specific learning strategies noted. The language level of the students (beginning or intermediate) was indicated as well as any learning activity discussed. All the data collected were classified into three categories: (a) metacognitive, (b) cognitive, and (c) social mediated strategies. Results of the data analysis indicated that the students used all strategies most often with less complex language tasks. The students also used strategies that required minimal cognitive processing most often across all language tasks. Classroom observations indicated that the teachers were not aware of strategies used by the students and rarely introduced strategies while teaching. Students with intermediate language skills used metacognitive strategies more often than beginning level students.

O’Malley et al. (1985) concluded that ELL students did apply strategies while learning and that teachers were not good observers of the usage. They recommended that learning strategies can be used as powerful learning tools for ELLs with proper classroom direction and support.

Chamot, Dale, O’Malley, and Spanos (1992) conducted a study to examine the effects of using CALLA instruction in mathematics with ELLS. The participants were 32 beginning or intermediate English proficient students in elementary, middle school and high school math classrooms. The students had been in the United States for one to three years. There were 15 teachers who participated and each teacher selected two math students who performed high (H), average (A), or low (L) in math.

Chamot et al. (1992) used an observational design. Data collected consisted of the student think-aloud interviews, protocols, and student worksheets. The students were taken out of the classroom and asked to solve a word problem, using the think aloud
method. Then the student was asked to identify the learning or problem solving strategies they used to solve the problem. The observations of the teachers classified their teaching as high CALLA implementation or low CALLA implementation. The criteria for this classification consisted of (a) graduate credits earned in CALLA methods courses, (b) participation in staff CALLA development, (c) responses on a questionnaire, (d) classroom observations on problem solving activities, and (e) expertise in teaching CALLA math.

The data were analyzed by transcribing the student think-aloud responses. These were coded for all the strategies identified and used by the student. The dependent variables were the think alouds and interviews. These were ranked as high, medium, and low. The mean scores and standard deviations were computed for each student in regards to their level (e.g., high, medium or low). A two-factor analysis of variance (ANOVA) for each of the dependent variables was conducted. Results of the data analysis indicated that students who scored high in math performance also scored better on finding the accurate problem solution. The high math ability students also indicated using high levels of metacognitive strategies in other subjects as well.

Chamot et al. (1992) concluded that students in classrooms taught by teachers who used the CALLA method solved word problems correctly more often than the students in low CALLA implantation classrooms. Chamot et al. (1992) recommended that explicit CALLA instruction in problem solving be used with ELLs.

Chamot (1995) investigated the implementation of CALLA in science and math courses for secondary ELL students. The purpose was to improve student achievement in both math content and language proficiency. The participants were 450 secondary ELLs.
in math content and 410 ELLs in science. The math program served students who tested below fourth grade math level in their native language. The science program served middle school ELLs at the beginning and intermediate levels of science and high school ELL students at the intermediate level of science.

In order to evaluate the impact of CALLA on the science program, a longitudinal study was conducted that tracked student progress in science from 1989 through 1995. The comparison group consisted of middle school ELLs who did not receive CALLA instruction.

Chamot (1995) developed criterion-referenced performance tests to assess student math and science performance, use of academic language, and application of learning strategies. In addition, classroom observations, and teacher reports were used. Results of the data analysis indicated that 29% of the middle school comparison group met the criterion for middle school science, and 22% of the high school science program met the grade level science criterion. In contrast, 57% of students who participated in CALLA science program met the science criterion and 54% of the high school student met the grade level science criterion.

Chamot (1995) concluded that the use of CALLA in math and science does assist ELLs in developing their academic language proficiency. She recommended that CALLA be implemented as a model that can be adjusted to meet the needs of students. She maintains that CALLA is effective in helping ELL students become successful academically.
Specially Designed Academic Instruction in English

The Specially Designed Academic Instruction in English (SDAIE) model is designed to provide English learners access to the curriculum while they develop the English language. The SDAIE is used with ELLs in mainstream classrooms or as an intermediate phase between content instruction in the primary language (Hansen-Thomas, 2008; Diaz-Rico, 2012b). The SDAIE goal is to provide ELLs the same quality and challenging curriculum that native English students receive (Cline, & Necochea, 2003). This is done through good teaching techniques and a focus on building academic language development (Hansen-Thomas, 2008). The SDAIE model consists of: (a) grade-appropriate content area learning, (b) English language and literacy development, and (c) positive social and affective adjustment (Peregoy & Boyle, 2008).

Gibbons (2003) conducted a study to develop an evaluation instrument to measure Specially Designed Academic Instruction in English (SDAIE), Cross-cultural Language Acquisition Development (CLAD), and English language development techniques. The participants were 10 fifth-grade teachers who taught elementary science lessons to classrooms with predominately ELLs.

The study used an evaluation instrument used to observe the control and experimental classrooms. The evaluation consisted of: teacher behavior, student behavior, curriculum taught, and procedures used. The instrument was constructed using SDAIE, CLAD, and English language instructional techniques specifically used to teach elementary science to ELLs. Three teachers who taught fifth grade served as the control group and did not have exposure to the evaluation instrument. Seven teachers who taught fifth grade served as the experimental group and did have exposure to the instrument.
being used to evaluate them. They were all observed three times over the course of the study. The observations focused on: (a) the type of instructional strategies used to teach science, (b) strategy implementation, and (c) if SDAIE and English language instruction techniques increased with the repeated use of the instrument for observation purposes.

The data were analyzed by calculating the total frequency of identified instructional strategies for each of the three observations. The mean frequency for instructional strategies was calculated for the control and experimental group. Then the mean was compared between the control and the experimental group to determine if one group had a greater change in frequency. Results of the data analysis indicated that overall the experimental group teachers increased in the use of SDAIE and English language instruction strategies after the three observations. No difference was found for the control group teachers.

Gibbons (2003) concluded that the repeated use of an evaluation instrument results in the increase of SDAIE and English language instruction strategies. She recommended providing SDAIE and English language instructional techniques to increase the use of cognitive learning for ELL students.

Ochoa and Cadiero-Kaplan (2004) conducted a study to investigate the academic programming for Hispanic middle and high school ELLs. Eight schools participated in the study.

An observation design was used for one school year. The procedures consisted of observations to evaluate eight areas of educational programming: (a) program approaches, (b) value for learners, (c) expectations of learners, (d) instructional goals (SDAIE strategies), (e) literacy orientation, (f) resources, (g) accountability and
assessment, and (h) parent involvement. A rubric was developed to observe each of the eight key areas. The rubric consisted of a 1-to-5 Likert scale on which 1 indicated low evidence and consistency and 5 indicated exceptional evidence and consistency.

Each of the eight schools were observed in a two-day visit. The research committee took many notes and observations. The teachers were given a thirty-five item survey in regards to their professional development needs. The school principal was interviewed with the focus being on understanding the climate of the school, the type of programs, and services offered for ELLs. Three to nine teachers were interviewed with the focus on determining the intensity and services offered to ELLs with respect to curriculum, consistency of services, expectations, program design, literacy development, and school support. A group of three to nine parents were also interviewed with the focus on school involvement, and type and quality of parental engagement.

The data were analyzed by graphing the Likert data and looking for patterns in the data. Results indicated that there was a decrease in the number of programs available at the schools. In addition, there was a decrease in the eight areas of educational programming available at the schools observed.

Ochoa and Cadiero-Kaplan (2004) concluded that the school district had the personnel and capacity to provide pedagogically sound programs to ELLs, but lacked the consistency and academic rigor needed to provide adequate educational access to ELLs. The observations indicated that the teachers at all school sites had knowledge of SDAIE instructional strategies, but used them inconsistently.

Ochoa and Cadiero-Kaplan (2004) recommended that the district provide teachers more consistent training in SDAIE strategies. In addition, they recommended that
curricula audit studies be conducted locally and at the federal level to ascertain consistency in the provision of appropriate instructional strategies for second language learners.

Laine (2009) conducted a study to explore teacher perceptions of the effectiveness of a constructivists sheltered instruction program. Fifty-nine teachers participated in the study with six being interviewed. The 56 teachers had received professional development in sheltered instruction or programs designed to make instruction comprehensible for ELLs. The teachers completed a survey that consisted of 34 items.

The survey was focused on: (a) educational background, (b) teacher preparation and the effectiveness of sheltered instruction, (c) sheltered instruction implementation in the classroom, (d) teacher reflections on teaching practices, and (e) professional development. In addition, six teachers were interviewed. The interviews consisted of open ended questions. The test-scores of 59 students in reading and math were assessed following the implementation of the constructivist based sheltered instructional model.

The data were analyzed using inferential statistics to determine if there were significant differences in the reading and math scores of the ELL students. The teacher surveys were analyzed using a dependent t -test to analyze the teacher perceptions. Teacher interviews were analyzed using open and axial coding procedures to identify comment categories and themes. Results of the data analysis indicated that the reading and math scores of the ELL students placed in mainstream classrooms where constructivist-based sheltered instruction was implemented were significantly higher than students not in these classrooms. There also was positive evidence from the teacher interviews and surveys that indicated the teachers perceived the sheltered instructional
strategies were an effective instructional tool when working with English language learners.

Laine (2009) concluded that sheltered instruction positively impacts linguistically and culturally diverse students in academic content areas. He recommended that sheltered instruction preservice and inservice training be provided to teachers.

**Sheltered Instruction Observation Protocol**

The Sheltered Instruction Observation Protocol (SIOP) is a framework for planning and delivering content instruction to ELLs. The focus of the SIOP is on access to the academic language of learning as well as repeated practice of the English language as it is used in the context of school (Echevarria, Short, & Powers, 2006).

The SIOP is a lesson planning and delivery system used when teaching ELL students. The method consists of eight components: (a) preparation, (b) building background, (c) comprehensible input, (d) strategies, (e) interaction, (f) practice/application, (g) lesson delivery, and (h) review/assessment (Echevarria, 1995; Echevarria, Richards-Tutor, Canges, & Francis, 2011). The SIOP model uses the general education curriculum and modifies it to make the content assessable to ELLs (Short & Echevarria, 2005). The goal of the SIOP model is to help ELL students access and develop the academic English language necessary to be successful in school.

Echevarria, Short, and Powers (2006) conducted a study to ascertain the impact of the SIOP model on student achievement in learning academic English. The participants were 346 students in grades 6-8. The intervention group consisted of 252 students. The comparison group consisted of 94 students from grades 6-8.
The procedures for the intervention group consisted of teachers participating in professional development and forming a learning community. During the workshops, the teachers learned about the SIOP model, how to scaffold instruction within the model, and learned to write lesson plans within the model. The teachers then implemented the SIOP model in their classrooms. The control teachers had credentials in SIOP training, but did not participate in the intensive SIOP professional development learning communities.

To measure the student academic literacy an expository writing assessment was conducted pre-and-post intervention. The writing assessment used was the *Illinois Measurement of Annual Growth in English* (IMAGE) (Echevarria et al., 2006), a standardized test of reading and writing. The data were analyzed by an independent rater and a 6-point rubric was used to score the writing samples. In addition, an analysis of covariance (ANCOVA) was conducted to ascertain if there were differences between the intervention classes versus the control classes. Results of the analysis indicated that the use of the SIOP model impacted student literacy writing positively. The intervention group scored higher on the posttest than did the control group. The intervention group also made greater gains in academic language during the school year. The intervention group made gains of 2.9 points on the IMAGE versus the control group that gained less than one point.

Echevarria et al. (2006) concluded that the SIOP model assists ELLs in developing the necessary academic literacy skills necessary for school particularly in the area of academic writing. They recommended that teachers must implement high-quality instruction that is systematic and guided by research.
Echevarria, Richards-Tutor, Canges, and Francis (2011) conducted a study examining the effectiveness of implementing the SIOP model in middle school science classrooms. The components studied were the effects of the SIOP model on the acquisition of academic language and science concepts for ELLs in middle school. The participants consisted of 1,021 students who were from one large urban school district where middle schools that had over 25% of the ELLs population.

Echevarria et al. (2011) used a quasi-experimental design with experimental and control groups. The schools were randomly assigned to either SIOP treatment with 649 participants or control group with 372 participants which was normal classroom instruction. In order to examine the impact of the SIOP on student learning, the ELL students were categorized as: (a) English Learners (EL), Fluent English Proficient (FEP), and English Only (EO). Teachers in the experimental group were given training in the SIOP model and then taught four science units using SIOP teaching methods and lesson plans. The control group did not receive SIOP training and they taught four science units as they typically taught them. A pre-and post-test was given to all students before and after the science units.

The data were analyzed using multilevel analyses of covariance to determine if the SIOP was an effective instructional model in the science classrooms. The difference was examined between the SIOP schools and control schools. Results of the data analysis indicated that there was significant variability in student performance across the study. The students in the SIOP schools scored higher in the essay composite scores than the students in the typical instruction in both pre-and-posttests. Also, noted was how students differed from one another based on their level English language acquisition category.
This meant that students who were limited English proficient scored poorly but fluent English proficient students scored higher in the pre-and-posttest assessments.

Echevarria et al. (2011) concluded that the study did not find statistical significance between the pre- and post-test of students instructed through the SIOP model and those instructed at the control schools. However, they maintain that the study did confirm that when the SIOP model was implemented consistently student achieved higher test scores. They recommend further research on the SIOP model that focuses on more intense teacher professional development to increase fidelity of the implementation of the SIOP.

Vidot (2012) conducted a study to investigate the implementation of the SIOP model when teaching math to students with low English language skills. The emphasis of the study was on teacher perceptions of the SIOP and the influence of their training or experience with the SIOP and its influence on their perceptions. The participants were 35 teachers with an average of nine years teaching experience. The teachers taught in a high school in which the majority of the students were transitional bilingual. Student scores for 180 students also were analyzed.

A mix method design was used to examine the use of the SIOP in math classrooms. Qualitative analysis included interviews and classroom observations. The quantitative data were the results from the *Northwest Education Association Measure of Academic Progress* (NWEA-MAP) (Northwest Evaluation Association, 2010). All 180 students in the study were required to take the NWEA-MAP three times a year.

Vidot (2012) triangulated from the interviews, classroom observations, and quantitative data from the archived assessment results from the NWEA-MAP (Northwest
Evaluation Association, 2010). The qualitative data were analyzed using the transcribed interviews and clustered into themes and coded. Student scores from the NWEA-MAP were analyzed using an ANCOVA and comparing the student scores. Results from the data analysis indicated that the qualitative analysis found a strong relationship between teachers who received SIOP training for teaching math to ELL students. The quantitative data indicated no difference in student achievement on the NWEA-MAP assessment for students who did and did not participate in SIOP classrooms.

Vidot (2012) concluded that teachers committed to students were the key to student achievement. While no significance was found when teachers used the SIOP model of instruction, the teachers did indicate they believed it to be a good instructional tool. Vidot (2012) recommended that further research be conducted in the SIOP model.

**Guided Language Acquisition Design**

The Guided Language Acquisition Design (GLAD) model is designed to assist teachers in providing language rich academic instruction. The model is based on the following constructs: (a) teach to the highest, (b) brain research (metacognition), (c) second language acquisition, (d) reading and writing, (e) active participation, (f) strategies, and (g) assessment and evaluation (O’Donovan, 2008).

Carrison and Ernst-Slavit (2005) conducted a study focused on the use of literature circles with fourth grade students to increase reading skill and comprehension. Literature circles were used to motivate the ELL students to read and participate in the classroom setting. Students from a fourth grade classroom in which five students were ELLs and one student received special education services for learning disability participated in the study.
An experimental type design was used in which pre- and post-tests were given to assess the student attitudes toward reading and gauge the type of books they like to read as well as reading comprehension. The students were grouped according to their book preferences, not reading ability. Then each group planned their reading goals for three weeks. Students worked with their groups to read and discuss the books. The students also wrote in a journal. The study also involved the use of observations, small group and whole group discussions as well as video and audio tapes. The attitude toward reading survey indicated that the students selected a wider variety of reading materials and genres.

The data were analyzed by using pre-and post-assessments to get the mean average of student attitudes toward reading. Results of the data analysis indicated that the literature circles were successful in increasing oral communication, positive attitudes toward reading, and reading comprehension.

Carrasson and Ernst-Slavit (2005) concluded that literature circles were successful in providing a language rich environment for students learning English. Carrison and Ernst-Slavit (2005) recommended that literature circles be implemented to provide repeated opportunities for ELLs students to engage in learning, use academic language, and interact with their English speaking peers.

McKeown and Gentilucci (2007) conducted a study examining the Think-Aloud reading strategy with middle school English language learners. The purpose was to examine the impact of the Think Aloud strategy on content area comprehension. There were a total of 27 students in the middle school who were ELLs with a reading proficiency level of early intermediate or greater.
Pre- and post-tests were given to assess reading comprehension on the High Point Comprehension Assessment (Schifini, Short, & Tinajero, 2002). The students were taught the Think-Aloud Strategy (Bereiter & Birds, 1985) using explicit teacher modeling over a two-week period during. This process consisted of the teacher reading aloud two or three lines then stopping and restating what happened in the story, asking herself a question, clarifying, and making a prediction. During the third and fourth week, the students applied the Think-Aloud Strategy to their daily readings. Then the post-test was administered to all students to measure the effect of think-aloud strategy.

The data were analyzed by using the means from the pre-and-posttest scores for each group to measure the effect of the strategy. A two-tailed t-test was conducted to measure the difference between the mean scores of the pre-and-posttests. Results indicated no difference across the ELL reading subgroups. There was a difference between the mean pre-and-posttest scores of each individual group. The early Intermediate students did not show any growth in comprehension, the scores were nearly identical for the pre-and-posttests. Students in the advanced group showed an increase in comprehension between pre-and-posttests.

McKeown and Gentilucci (2007) concluded that ELLs do use metacognitive strategies, but the effectiveness of the strategy is dependent on a subject’s level of language proficiency. They recommended additional research to ascertain which metacognitive processing tools are most beneficial for students with different levels of language proficiency.

Abedi and Herman (2010) investigated the relationship between ELL students and the level of opportunity for them to learn in school. They believed that this may explain
the performance differences between ELL and non-ELL students. Opportunity to learn was defined by Carroll (1963) as providing students sufficient time to learn. The participants were 602 eighth grade algebra students and nine teachers.

Abedi and Herman (2010) used a causal-comparative design. The data were collected using: (a) a survey focused on the opportunity to learn completed by students and teachers, (b) an assessment of achievement in Algebra, (c) the fluency subscale from the Language Assessment Scale (McGraw Hill, 2007), and (d) assessment of student preparation in mathematics and their ability to understand directions. The opportunity to learn survey contained 28 topics taught in the grade 8 algebra classrooms. The algebra assessment was a 20-item test used to assess the eighth grade participants. The language fluency scale measured the language proficiency of the ELLs. Student preparation assessment focused on prior learning in regards to country of birth and time in the country.

Results from the data analysis indicated that the students opportunity to learn was associated with student performance. The English language learners reported lower levels of opportunity to learn when compared to English speaking students. The data indicated that two factors contributed to access to opportunity to learn, English proficiency and self-reported ability to understand the teacher instructions.

Abedi and Herman (2010) concluded that it is important that ELLs understand teacher instruction and directions because without understanding the student has fewer opportunities to learn. They maintain that teachers must use strategies to assist student understanding (e.g., pausing, high expectations, effective teaching, and learning
activities). Abedi and Herman (2010) recommend that different types of instructional models be used with ELLs and suggest that GLAD may be most supportive.

**Instructional Interventions for English Language Learners**

Under the *No Child Left Behind Act* (NCLB) of 2001, accountability of all educators to provide effective, positive academic performance for all students is emphasized, including students learning English. The accountability under NCLB means that English language learners, with and without disabilities, are participating in State assessments in the content areas of reading, mathematics, and science (Shyyan, Thurlow, & Liu, 2008; Ballantyne, Sanderman, & Levy, 2008). Issues related to the academic performance of these students are related directly to appropriate instruction by teachers who are responsible for the education of all students in their classrooms, regardless of their primary language (Artiles & Ortiz, 2002).

**General Education**

An estimated 25% of all students in the United States are from immigrant families and live in homes in which a language other than English is spoken (Ballantyne, Sanderman, & Levy, 2008; Samson & Collins, 2012). Because of this change in demographics, all teachers must have the tools and skills needed to support students as they learn English. General educators overwhelmingly report that they know the content to teach grade level curriculum, but lack the knowledge and skills to assist ELLs in accessing the general education curriculum (Youngs & Youngs, 2001; Reeves, 2006). Current research indicates that there are learning interventions that are successful in teaching ELLs in general education (Peregoy & Boyle, 2013).
Math. Abedi and Lord (2001) investigated the significance of language on student achievement in solving word problems. Thirty-six eighth grade ELLs enrolled in math participated in the study. The students were interviewed to ascertain their perceptions and preferences concerning learning. The second part of the study focused on the accuracy of the National Assessment of Educational Progress (NAEP, 2012) math items.

Abedi and Lord (2001) used an experimental design. First the ELLs were interviewed concerning their perceptions and preferences with word problem instruction and assessment. The students were given model problems and asked to indicate which problem was easiest to read and understand.

The data were analyzed using z statistics and compared student responses to their overall participation scores. Results of the data analysis indicated that the students showed a clear preference for word problems that were easier to read as well as at their current linguistic level. Abedi and Lord (2001) concluded that preference for the revised items supported the idea that math items should be linguistically simplified for ELL students in mathematics classrooms.

In the second portion of the study, Abedi and Lord (2001) examined the impact of selected linguistic content of the NAEP (2012) math items that were answered correctly by ELL students. The participants were 1,174 eighth-grade students from 11 schools that were selected based on language, socioeconomic, and ethnic background.

Twenty items from the NAEP (2012) math assessment were selected and a simplified version of each item was written. The language was simplified, but the numerals, quantities, and visuals remained the same as the original. Two different math
tests were created for this study. Booklet A consisted of 10-original test items from the NAEP (2012) and 10-revised test items. Booklet B consisted of all revised test items and 10-original test items. The tests were administered to all students to ascertain which items resulted in the higher scores.

The data were analyzed using descriptive statistics for the total sample and for subgroups of students. Results of the data analysis indicated on the original items that the ELLs scored significantly lower than proficient speakers of English. However, on the modified items the students learning English scored significantly higher. The language modifications had a higher impact on the low-performing ELL students.

Abedi and Lord (2001) concluded that the interaction between language and mathematics achievement is crucial and must be taken into consideration when working with ELLs. Abedi and Lord (2001) recommend that further research be conducted to identify more interactions among linguistic, socioeconomic, and variables that impact learning for ELL students.

Bernardo (2002) investigated whether the language of word problems had an effect on the understanding and solving of the problems by bilingual students. The participants were 92 second grade students who spoke, read, and understood Filipino and English. However, 48 students reported that Filipino was their first language and 44 reported that English was their first language.

Eighteen story problems were used in the study and consisted of three problems (e.g., combination problems, money problems, and comparison problems). The word problems were written in English and then translated into Filipino. Each student worked
on 18 problems, nine in Filipino and nine in English. The students worked on the problems with no time limit. The sessions were audio recorded.

The data were analyzed using coding of the problems as correct or incorrect for comprehension. Then the data collected were analyzed using an analysis of variance (ANOVA) for mixed factorial designs with the students’ first language as the between groups factors and difficulty and language of the problem as the within group factor. Results of the data analysis indicated that the problem solving of the bilingual students was low overall for word problems, both in the students’ first and second languages. The results did indicate that bilingual students performed better in linguistically processing the information if the text was written in their first language.

Bernardo (2002) concluded that solving and understanding a word problem was more adversely affected when the problem was written in the bilingual students’ second language. Also, effective problem solving in the first language may be related to a stronger proficiency in processing utterances in the native language and less effective problem solving in the second language may be related to lower proficiency in the second language. Bernardo (2002) recommends that mathematical problem solving is not purely abstract and decontextualized, but also relies on language and a clear linguistic component.

Abedi, Lord, Hofstetter, and Baker (2005) examined the performance of ELLs on word problems and the effect of accommodation strategies. They focused on the impact of student background characteristics on the effectiveness of these accommodations. The participants were 946 eighth grade students.
An experimental design was used in this study. The students were assigned randomly to the different accommodation groups within the classrooms. Four accommodations were used in this study: (a) modified (simplified) language of the test items, (b) a glossary, (c) extra time, and (d) a glossary plus extra time. The control group worked on test items from the National Assessment of Educational Progress (NAEP, 2012). Test booklets were created for each accommodation used. For the control group, a booklet was developed that used the English assessment from the NAEP (2012) math items.

The data were analyzed using a multiple regression analysis. Results indicated an increase in NAEP (2012) scores when both the ELL students and English speaking students accommodations were implemented. The scores for the students learning English were higher for all types of accommodations, except the glossary only. In addition the data indicated a difference among student background variables (e.g., English, math, and reading proficiency) and NAEP (2012) test performance for the different types of accommodations.

Abedi et al. (2005) concluded that the positive findings support the use of accommodations in math with ELLs. The accommodations that worked with the students were English accommodations (e.g., modified English), extra work time, and the provision of a definition glossary plus extra time. Abedi et al. (2006) recommended that ELLs be taught academic English to achieve success in content area learning and assessments.

**Reading.** Carlo, August, McLaughlin, Snow, Dressler, Lippman, Lively, and White (2008) studied the impact of English vocabulary enrichment and direct word
instruction strategies with students learning English. The participants were 254 bilingual and monolingual students from fifth grade classrooms in four schools.

A quasi-experimental design was used. The classrooms were assigned randomly to the experimental or the control group. The experimental group consisted of 10 classrooms and six classrooms served as the control group. The control group did not receive any special instruction they used the typical school curriculum. The experimental classrooms, 10 to 12 vocabulary words were introduced weekly. The instructions measures used were word mastery, word association, polysemy, cloze procedures, and morphology. Word mastery determined if the vocabulary words taught were learned. The word association task measured depth of word knowledge. Polysemy production was used to generate as many sentences possible using as many of the different meanings of polysemous words. The cloze procedure was used to check for reading comprehension after the students read three stories. To assess for morphology, the students completed various morphology tasks.

The data were analyzed using a multivariate analysis on the scores on the mastery, word association, polysemy, cloze procedure, and morphology tasks. The tasks measured overall between subjects effects from classrooms and the language status of the students. The data indicated that a positive increase in learning occurred for academic words, awareness of polysemy, inferring word meaning from context, and morphology for not only English language learners, but for English-only students as well. The students in the intervention group showed gains in knowledge of the words that were explicitly taught. In addition, the study indicated that improvement in vocabulary and word analysis skills lead to an increase in reading comprehension.
Carlo et al. (2008) concluded that supporting vocabulary learning results in positive reading outcomes. They recommend teaching new vocabulary to ELL students is important and impacts overall reading achievement. They encourage teachers to use strategies focused on word meaning in context, identifying words in new contexts, using Spanish cognates, and analyzing morphological structures.

McCallum, Krohn, Skinner, Hilton-Prillhart, Hopkins, Waller, & Polite (2011) examined the use of the Ask, Read, Tell (ART) (McCallum et al., 2011) strategy as well as pre-and-during reading activities and post-reading peer discussions to increase reading comprehension. The 115 participants were from two inner-city high schools.

An experimental design was used that consisted of three conditions that were counterbalanced. They included the ART (McCallum et al., 2011) only condition, the ART (McCallum et al., 2011) plus peer discussion condition, and the control condition. In the control condition, the students simply read the passage and completed 10 multiple choice questions.

The data were analyzed using descriptive statistics, paired t-tests, and effect sizes. Results of the data analysis indicated that there was no difference on the comprehension scores between the ART only condition and the control group. However, there was a positive effect for the ART plus peer discussion group. This group achieved higher comprehension scores than the other two groups.

McCallum et al. (2011) concluded that ART plus peer discussion is effective intervention to increase reading comprehension. They recommend that that ART plus peer discussion be implemented in middle and high school courses in which ELL
students experience difficulty in content area classes (e.g., humanities, social science, physical science).

Jeon (2012) conducted a study to ascertain the role of oral reading fluency in second language reading among 255 high school students in South Korea. The first language of the students was Korean and their second language was English. The focus of the study were: (a) the relationship between oral reading fluency and other reading predictors, and (b) the contribution of oral reading fluency to silent reading comprehension. The students had studied English for an average of 7.7 years.

The study consisted of administering nine tests that included three oral reading fluency assessments measured the nine variables in the study. The three oral reading fluency tests were: (a) pseudo word reading test, (b) the Word Reading Test (Wang & Koda, 2005), and (c) a passage reading test. Six non-oral reading fluency assessments also were used: (a) a morphological awareness test, (b) a word knowledge test, (c) assessment of grammar knowledge, (d) a reading comprehension test, (e) a listening comprehension test, and (f) a metacognitive awareness reading assessment.

The pseudo word reading test was used to measure phonemic decoding fluency. The word reading test measured word reading fluency. The passage reading test measured passage reading fluency. The six non-oral reading fluency assessments focused on morphological awareness, word knowledge, grammar knowledge, reading comprehension, listening comprehension, and metacognitive awareness. The oral reading fluency tests were administered in a group setting and the non-oral reading tests individually.
An exploratory factor analysis was conducted. Two factors were identified as making a positive impact, fluency and comprehension. In addition, passage reading fluency cross loaded with both factors of oral passage fluency and silent reading comprehension.

Jeon (2012) concluded that oral reading fluency and reading comprehension are key reading predictors for ELL students. She recommends further research concerning the growth of oral reading fluency of ELL students as they master basic language skills. She maintains that oral reading fluency has a strong impact on the academic learning of ELL students.

**Science.** Duran, Duran, and Weffer (1998) attempted to define the manner in which ELL students constructed the meaning of biology concepts based on their existing linguistic skills. The focus on instruction that engaged students in constructing meaning through the use of science language, signs, symbols, and technology based on Vygotsky’s semiotic method to learning. The participants were 14 students in grade 10 who spoke Spanish at home and were enrolled in biology.

The ethnographic study focused on the relationship between the nature of the instructional activity and the language resources used by the students for understanding. Student scores from the *Tests of Achievement Proficiency* (TAP) (Scannell, 1988) were reviewed as well as teachers were observed teaching. In addition the study consisted of biology with a specific focus in the use of notes, content, diagrams, and explanations. Data were collected on supplemented lesson materials, and student writing, and group discussions. In addition, family background data were collected using a questionnaire.
The data were analyzed using the comparing analytic procedures. Student work samples were collected, recorded, and analyzed for emerging patterns. Test scores and activities were coded and patterns recorded to ascertain student language patterns. The data analysis of the TAP (Scannell, 1988) reading scores, only three students read at grade level, six students read below grade level, and five students read above grade level. The TAP (Scannell, 1988) also indicated that for science, 10 students were below grade level and four students were at or above grade level. The patterns that emerged from the observational data and interviews indicated that the use of semiotic tools and diagrams were powerful instructional tools to teach scientific language. In addition, the observations indicated that the students relied on the teachers for scientific interpretations of real life experiences and on their oral instructions to gain understanding of the meaning of science.

Duran et al. (1998) concluded that ELL students relied on the teacher to signal or directly specify what was important to learn in the science classroom. They recommend the use of semiotic tools, diagrams, real life experience; connections to the Spanish language, and direct instruction of scientific academic language.

Amaral, Garrison, and Kletschy (2002) collected data to measure student achievement in science, writing, reading, and mathematics for English language learners. The study specifically examined the science performance of ELLs, with emphasis in: (a) the overall improvement of science education, (b) the development of science process skills, (c) the enhancement of critical thinking, and (d) writing improvement. The participants were 615 students in fourth grade and 635 students in sixth grade.
A comparison study explored the academic areas of science and writing proficiency. The study focused in the materials students used to explore in science, small group versus independent work, key science vocabulary, science notebooks, the use of questions and inquiry, visual and the use of linguistic clues, discussion, observations, student generated questions, and writing in notebooks.

Data were analyzed using student achievement in the academic areas of science and writing proficiency. A linear regression analysis between program and the mean science achievement scores were analyzed for each grade level. The three areas of science were measured (e.g., earth, physical, and life science). Writing was analyzed through the use of science notebooks. The Limited English Proficient (LEP) students were categorized into two subgroups, LEP and Limited/Fluent English speaking. The English proficient students were categorized into three subgroups the Fluent English proficient (FEP), English-Only (EO), and re-designated fluent English proficient (R-FEP).

Results of the data analysis indicated a significant increase in science scores for the LEP students the longer they were in the inquiry-based science program. The inquiry-based program resulted in higher test scores in the areas of strong understanding of science content and improved level of linguistic proficiency in English. Achievement in writing also was noted the longer students were in the program there was a relationship between the number of years of participation in the program and achievement.

Amaral et al. (2002) concluded that the use of inquiry-based science academically benefits students learning English. They recommend that further research be conducted
on the achievement of students learning English to determine the level of academic sustainability over time.

Visone (2010) conducted a study that examined the relationship between reading and student performance on a science test. The study focused on: (a) the voice of the students, (b) student interpretation of test items, (c) issues students have with test items, and (d) student knowledge to complete test items. A total of 135 eleventh grade students from three high schools participated.

A multiple-case study was used in the study. The students were interviewed about science items included on the *Connecticut Academic Performance Test* (CAPT) (CSDE, 2007). The study examined the relationship between reading and student performance on the science portion of the *CAPT* (CSDE, 2007).

The data analyzed were the student responses from the interview and a completed questionnaire. The responses were coded using categorical codes and open codes. Categories were developed from patterns that emerged from each code. Axial coding used to gain a better understanding of the major themes that evolved.

Results that emerged from the themes were: (a) the students varied greatly in their ability to understand the conceptual nature of the science test items, (b) not all of the students were careful, detail-oriented readers, (c) student background knowledge varied, (d) the relevance and/ or amount of information provided to students in the test items impacted their performance, (e) individual test items had specific features that affect student responses, and (f) students use a variety of strategies on tests.

Visone (2010) concluded that ELLs must have a strong background knowledge in science in order to answer questions correctly on standardized tests. He recommends that
metacognitive strategies as well as a systematic approach be used to assist ELLs to better understand test taking strategies in science.

**Special Education**

More and more students who are learning English are being identified as needing special education services (Baca & Cervantes, 2004; Artiles & Ortiz, 2002). It is imperative that special education teachers be prepared to educate ELLs with disabilities and provide the necessary effective teaching interventions to assist them (Zehler et al., 2003; Abedi, 2004)

**Math.** Shaftel, Belton-Kocher, Glasnapp, and Poggio (2006) conducted a study examining the overall impact of test-item language on performance, with particular attention to the language features that have the most effect on specific groups of students. A representative sample of test items from the Kansas General Mathematics Assessment served as the data sample. The math assessment focused on number and computation, algebra, geometry, and data. Sample items were drawn from 2000 students in grades 4, 7, and 10. Each item was assessed and coded for linguistic characteristics by independent raters.

The resulting data were analyzed using a two-step process that included a regression analysis and a multiple linear regression analysis to examine the relationship between linguistic characteristic scores and predictor variables. The data indicated that the language features of the test had an overarching impact for grades 4, 7, and 8 with the problem area being mathematic vocabulary. The fourth grade students had difficulties answering test items that were ambiguous, had multiple meaning as well as words that
were unclear, colloquial, or slang. The students in 7th and 10th grade had problems with comparative terms.

Shaftel et al. (2006) concluded that vocabulary enrichment is the key to learning mathematics for students with disabilities and ELLs. They recommend further research concerning the relationship among mathematics achievement, reading achievement, and language proficiency for students learning English and those with disabilities.

Fuchs, Fuchs, Craddock, Hollenbeck, Hamlett, & Schatschneider (2008a) conducted a study to investigate the mathematical problem-solving ability of at-risk learners who were learning English. The participants were 1,141 third grade students of which 288 were identified as at-risk for poor problem solving skills and/or ELL.

A stratified sample where 40 classrooms were assigned to the control condition was used. The study occurred for duration of four school years where a quarter of the sample entered the study each year. The procedures consisted of the control group receiving three weeks of math problem solving instruction, plus 13 weeks of teacher-designed math problem solving instruction. The experimental group used the Hot Math (Fuchs et al., 2008a) and schema-broadening instruction. Hot Math (Fuchs et al., 2008a) teaches the mathematical structure of problem type, recognition of the problem-type category, solution by the problem type, and transference of problem solving skills to real life. The experimental group received three weeks of math problem solving instruction plus 13 weeks of schema-broadening instruction. A third group also received tutoring.

The data were analyzed using the data collected from the three problem solving measures (control, experimental, and tutoring). Results indicated that students who
received tutoring and as well as validated classroom instruction achieved better than tutored students who received conventional classroom instruction.

Fuchs et al. (2008a) concluded that two tiers are better than one tier in providing at-risk students learning English with validated instruction in the classroom. They recommend that intensive instruction and tutoring is essential for at risk students. Without the tutoring, the gap between at-risk students and their peers will continue to grow.

Fuchs, Seethaler, Powell, Fuchs, Hamlett, & Fletcher (2008b) conducted a study to assess the effects of preventative tutoring on the solving of math word problems. The participants were 35 third grade students with math and reading difficulties, many were English language learners.

Fuchs et al. (2008b) used a randomized control design in which the 35 students were randomly assigned to their general education math program or the experimental group in which they received preventative tutoring. The experimental group received preventative tutoring three times per week for 12 weeks. The tutoring used a schema-broadening intervention that emphasized the math structure of three problem types, taught students to recognize the three problem types, taught solutions to the three word problem types, and taught transferring solution methods.

The data were analyzed using a one-way ANOVA. Results of the data analysis indicated that explicit schema-broadening preventative tutoring with third grade students with math difficulty resulted in significant improvement in math scores.

Fuchs et al. (2008b) concluded that explicit schema-broadening instruction was beneficial to students who struggled in math. They recommend that future research focus
in the development of a tutoring protocol to use with at-risk students as well as those learning English or those with disabilities.

Reading. Greenwood (2001) conducted a study to examine the use of *Class-Wide Peer Tutoring -Learning Management System* (CWPT-LMS) (Greenwood, 2001) by five teachers of ELL students in Grades 1-5. A total of 117 English language learners with disabilities also participated.

Greenwood (2001) used a single subject design across classes and teachers. The students were taught using the CWPT-LMS curriculum for a period of 15-to-21 weeks. The CWPT-LMS involves reciprocal peer tutoring with peers of the same age. The students experience one-on-one peer tutoring, immediate error correction, fast paced instruction and multiple opportunities to respond. The dependent variable was student pre-and-posttest scores from vocabulary and spelling tests.

All test scores were graphed and examined across all five classrooms. Results indicated a significant increase in scores when CWPT-LMS was used by the five teachers. The data of the ELL students indicated achievement as well as sustainability pattern of mastery in vocabulary and spelling.

Greenwood (2001) concluded that the CWPT-LMS provided the teachers an effective means of monitoring students to mastery of content. He recommends the use of *Class-Wide Peer Tutoring Learning Management System* (CWPT-LMS) to assist with increasing vocabulary and spelling scores for ELL students.

Haagar and Windmueller (2001) conducted a study to improve reading outcomes for ELLs at risk for reading failure. The participants were 335 ELLs, 156 first grade, and 179 second grade students.
Haagar and Windmueller (2001) used an experimental design in which pre-and-posttest assessments as well as the *Dynamic Indicators of Basic Early Literacy Skills* (DIBELS) (Kaminski & Good, 1996) assessments were used. The study included the use of DIBELS (Kaminski & Good, 1996) was used to assess fluency with fundamental reading skills. Several subtests also were used: Phoneme Segmentation Fluency, Nonsense Word Fluency, Oral Reading Fluency, Letter Naming Fluency, and Word Sentence Fluency.

The Phoneme Segmentation Fluency was used to measure the ability to break apart a word by pronouncing each phoneme in isolation. The Nonsense Word Fluency was used to measure decoding skills. The Oral Reading Fluency was given to measure oral reading fluency. The Letter Naming Fluency was given to assess rapid letter naming. The Word Sentence Fluency was given to measure generation of sentences orally.

The teachers participated in professional development workshops. In the workshops, they discussed the most critical components of reading and were trained on the use of *DIBELS* (Kaminski & Good, 1996) prior to implementing it in their classrooms.

Results of the data analysis indicated that the first graders made growth, but met their benchmarks later than expected. Second grade students made growth, but did not meet second-grade benchmarks. Fluency benchmarks were not met by either grade level. In order to compare the progress of students with LD and the students identified as at-risk or ELL, means were charted for these groups using the reading measures. The results indicated that the students with LD outperformed the at-risk students in all three data points. The second grade student with LD and at-risk students were compared and the students with LD achieved higher scores than the at-risk students or ELL students.
Haagar and Windmueller (2001) concluded that systematic interventions should be the primary focus for students with disabilities, ELLs, and those at-risk for school failure. They (2001) recommend that research in this area continue with further development of effective literacy instruction for ELL students in the urban setting.

Saenz, Fuchs, and Fuchs (2005) examined the effects of Peer-Assisted Learning Strategies (PALS), a reciprocal class wide peer-tutoring strategy, on the reading performance of elementary-age ELLs with learning disabilities. There were 132 native Spanish speaking students who participated in the study, approximately 24 were identified as having a learning disability.

Saenz et al. (2005) used an experimental type design in which one-to-one instruction, small group instruction, whole class instruction, and independent seat work were evaluated. The classrooms were assigned randomly to either PALS or the control condition. Data were collected from 11 students in each classroom. Two were labeled as having a learning disability, 3 as low achieving, 3 average achieving, and 3 as high achieving. All students were learning English.

The data were analyzed using six one-way ANOVAs with treatment as the between subject factor. To evaluate the type of instruction provided in PALS versus the control classroom, all teachers submitted their lesson plans for review and the lesson plans were evaluated for the percentage of activities per week spent with students one-on-one, small-group, whole group, or independent work, and the percentage of activities in which instruction was delivered by the teacher or peers. The data indicated that PALS improved reading comprehension for ELLs with and without LD in transitional bilingual
education classrooms. A significant difference, with an increase in scores, was found for the one-to-one instructional group.

Saenz et al. (2005) concluded that PALS enhances student reading development as well as student enjoyment of reading. They recommend that PALS be used to improve reading comprehension for ELLs with and without learning disabilities.

Fontana, Scruggs, and Mastropieri (2007) conducted a study to determine if mnemonic strategy instruction facilitated learning in a high school social studies classrooms. The participants were 46 general education students, 13 student with a learning disability, and 14 students who were learning English.

Fontana et al. (2007) used a within-subject crossover design. Four classrooms were assigned randomly to a counterbalanced treatment order in which two classes received mnemonic instruction for Unit one and direct instruction for Unit two and the other two classes received direct instruction for Unit one and mnemonic instruction for Unit two. This was done so that all students received both conditions and served as their own control group. The mnemonic instruction consisted of keywords with interactive illustrations taught using direct instruction.

Data were analyzed using an ANOVA with repeated measures. Results of the data analysis indicated there was no condition specific performance differences identified for the unit test, students in the social studies classes scored higher on a cumulative multiple choice test on content learned in the mnemonics condition compared to content learned through direct instruction, cumulative test scores were correlated positively with reported strategy use, the student time on task was significantly higher with mnemonic instruction, and student and teachers were satisfied with the mnemonic strategy.
Fontana et al. (2007) concluded that students learning English scored significantly higher on social studies tests when they used mnemonic strategies. However, the findings indicated that the mnemonic intervention did not provide significant differences for the English speaking or students with LD. They recommend that mnemonic strategies are effective for ELLs and provide a high level of academic engagement for this population of learners.

Science. Mastropieri, Scruggs, and Levin (1985) conducted a two-part study to examine the effects of the combined mnemonics strategy on the immediate recall of students with a learning disability and with younger students without a disability. Several students in both studies were learning English. Ninety students participated in the first study and 45 students in the second study.

In the first study of two achievement groups were created (higher vs. the lower achieving students) based on the results of the California Achievement Test (CAT) (CDE, 21013). The students were assigned randomly to three experimental conditions: (a) mnemonic, (b) questioning and (c) free study. The students in each group received direct instruction on applying the strategy in the science classroom. The same procedures were followed for the second study with the younger students without disabilities.

The data were analyzed by using a multiple comparison procedure applied to the three pairwise differences between conditions. The contrasts were examined both as main effects and as interactions with reading achievement. Results indicated that the pictorial mnemonic strategy for learning the hardness levels of minerals was the most effective intervention for both students with learning disabilities (and ELL students) and students without disabilities.
Mastropieri et al. (1985) concluded that the use of effective strategies, especially the pictorial mnemonic strategy, assists with long-term retention of academic material. They recommend that the pictorial mnemonic strategy be used in various content areas, not just science-related material. They also recommend that that mnemonic instruction maybe a valuable resource to use with students learning English in order to assist with learning and recalling information.

Cuevas, Lee, Hart, and Deaktor (2005) conducted a study to examine the impact of an inquiry-based instructional intervention in science. Twenty-eight students and seven teachers participated in the study. The students represented general education students, students with disabilities, and ELLs.

Cuevas et al. (2005) used both qualitative and quantitative methods. The teachers attended a four-day workshop focused on inquiry-based science instruction. They taught the students to engage in selected aspects of inquiry as they practiced the scientific method. They also emphasized key science concepts and ideas. And, finally the students practiced scientific inquiry. All instruction was videotaped and transcribed.

An elicitation protocol was developed for asking the students questions concerning problem solving within the scientific method. The student scores for elicitation (pre-and-post) were collected and the data were analyzed using t-tests. The data indicated that all students, following intervention, increased their inquiry skills. Their ability to plan procedures for investigation, record results, and draw conclusion increased. The ELL students who had exited the ESOL (teaching English to speakers of other languages) program at their school performed better than the ELL students still in the program.
Cuevas et al. (2005) concluded that inquiry-based instruction promotes science learning with all students. They maintain that students learn to ask appropriate questions with this method. They recommend that further research be conducted to examine the relationships among instructional practices, student engagement in science inquiry, and language learning.

**Pre-Service Teacher Education in English Language Instruction**

Under the *No Child Left Behind Act* (2001) teachers must address the learning needs of all students in their classrooms. This means that education (preservice and inservice) must ensure that educators are ready and able to work with all students. With the increase of students learning English in schools, it is imperative that teacher preparation programs prepare pre-service teachers to work with ELLs. There is great need for effective instructional practices for this population that are implemented by general and special education teachers (Nguyen, 2012; Ballantyne, Sanderman, & Levy, 2008)

**General Education**

Teacher preparation is crucial in preparing general education teachers to work with ELLs. Preservice general educators must be prepared to provide knowledge and understanding of content through the use of appropriate instructional strategies to meet the needs of ELLs (Short & Fitzsimmons, 2008; Ballantyne, Sanderman, & Levy, 2008).

Menken and Antunez (2001) investigated three areas of preservice education: (a) an overview of the types of programs in bilingual education that exist in institutions of higher education (IHE), (b) in-state level requirements for teaching licensure in this area, and (c) a qualitative analysis to explore requirements in a nationally representative
sample of bilingual teacher preparation programs. A total of 1075 surveys were mailed to deans or department chairs of schools, colleges, and departments of education across the country. A total of 417 responses were collected.

The purpose of the survey was to determine the scope of teacher education programs and to ascertain the teacher preparation of bilingual educators. The survey was created to obtain: (a) the number of bilingual teacher education programs nationwide, (b) the number of teacher education programs that require TESL courses, (c) admission criteria for a degree in bilingual education, (d) required courses for a degree in bilingual education, and (d) specific language groups targeted in the program.

In order to review and analyze the courses that were offered in preservice training, a matrix was created and used as a tool in the coding and analyzing the data collected. The matrix also was used to categorize the courses required for teachers and to document requirements for state licensure in the area of bilingual education.

Information was collected from the website from the Department of Education in each state and from the university websites. The analyses and comparisons consisted of requirements of state certification and university requirements. The comparisons were conducted across/between states and university programs. Results of the data analysis indicated that a small minority of universities have a bilingual education or Teachers of English to Speakers of Other Language (TESOL) program. Data indicated that a few general education teacher preparation programs require their candidates to be prepared to teach ELLs. In addition, all requirements for licensure in each state were reviewed to evaluate who was offering certification or endorsement in bilingual education. Only 23
states had this certification or endorsement. Results also indicated a decrease in programs requiring that general educators be prepared to teach ELL students.

Menken and Antunez (2001) concluded that state licensure requirements affect the preparation of preservice teachers in universities. If a state does not require licensure or endorsement, the universities within the state do not provide coursework. They recommend that to adequately prepare future teachers the state and university must provide a well-balanced curriculum in the areas of pedagogy, cultural and linguistic diversity, and linguistics for all educators.

Durgunoglu and Hughes (2010) investigated the self-efficacy, attitudes, perceived preparedness, and the knowledge of preservice teachers with concerning teaching English language learners (ELLs) in high school classrooms. Two studies were conducted, 62 preservice teachers participated in the first study and four preservice teachers were observed teaching ELL students in the second study.

Surveys were completed and teachers observed in classrooms. In the first study, 62 preservice teachers completed a survey focused on their: (a) attitudes, (b) beliefs, and (c) knowledge of ELL issues. The survey consisted of 27 questions that used a Likert score of 1-5 strongly disagree to strongly agree.

Results of the data analysis indicated that the preservice students believed that they were neutral concerning their preparedness and effectiveness in regard to teaching ELL students.

In the second study, Durgunoglu and Hughes (2010) observed four preservice teachers to evaluate their use of resources, classroom activities, and modifications to assist ELL students.
The data were analyzed using observation notes and a 61-item observation checklist used to document the type of teaching strategies, content delivery methods, assessment procedures, and language strategies used by the four preservice teachers. Results of the data indicated that on the 61-item checklist all four participants had positive attitudes towards ELL students and their parents. However, their perceived preparedness and self-efficacy ratings were low. In addition, the following themes emerged: (a) feelings of neglect, (b) low peer support, and (c) no mentoring by supervising teacher. In short, the preservice teachers felt they were on their own when dealing with the needs of their ELL students.

Durgunoglu and Hughes (2010) concluded that preservice teachers do not feel prepared to educate the ELL students they encounter in the general education classroom. Across all classrooms, little interaction was observed between the teacher and their ELL students. The preservice teachers who did feel prepared to teach ELL students did not know how to engage these students. Also, the mentor teachers did not model appropriate behaviors on how to interact with ELL students. Durgunoglu and Hughes (2010) recommend preparing preservice teachers to teach ELL students. They maintain that knowledge in this area will lead to higher levels of self-efficacy. In addition, providing training can lead to increased teacher commitment and better education opportunities for ELL students.

Jimenez-Silva, Olson, and Jimenez-Hernandez (2012) conducted a study to examine the preservice curricula to increase preservice teachers’ confidence in their ability to teach ELLs. The participants were 197 preservice teachers enrolled in
undergraduate coursework within an elementary or secondary education certification program.

Jimenez-Silva et al. (2012) used a survey design. The survey was created using a 4-point Likert scale to identify nine areas: (a) instructional strategies, (b) classroom lectures, (c) group activities, (d) Power Point presentations, (e) textbooks, (f) research articles, (g) course assignments/papers, (h) peers, and (i) instructors. The survey also assessed how confident the preservice teachers were related to working with ELL students. This included their confidence with content covered in the courses, confidence with strategies learned to help ELLs with language acquisition and content in English, confidence in teaching ELLs, understanding how language is acquired and developed for ELLs, the laws and policies related to ELLs, confidence with assessing ELLs, organizing instruction to meet ELL needs, and meeting the needs of ELLs. The preservice teachers completed the surveys in their courses.

The data were analyzed using a component analysis to explore the structure of teacher preparation classroom experiences. Results of the data analysis indicated that the preservice teachers believed that they could teach ELLs and that the information they learned and the instructional methods they were taught were instrumental in assisting ELLs with learning and academic development. In short, the preservice teachers believed they were prepared to work with ELL students.

Jimenez-Silva et al. (2012) concluded that preservice teachers learn best when a combination of techniques focusing on teaching ELL students (e.g., lectures, readings, and interactive strategies) are implemented. They recommend that preservice teachers be
assessed on knowledge of ELLs, content area instruction, and the integration of instruction.

**Special Education**

The need for preservice special education teachers to be trained in the provision of appropriate services is crucial. Future special educators need to know the difference between lack of English proficiency and a disability (Nguyen, 2012). In addition, preservice teachers require learning about effective strategies for working with students of diverse language background who also have disabilities (Zetlin, Beltran, Salcido, Gonzalez, & Reyes, 2011).

Taylor and Sobel (2001) conducted a study examining preservice teacher beliefs about addressing the needs of students whose background and ability level differs from their own. There were 129 preservice graduate students who participated in the study.

A longitudinal design was used and included both qualitative and quantitative data. A questionnaire was used that consisted of two parts: (a) statements about teacher beliefs and needed skills, and (b) defining key terminology. The questionnaire also contained open ended questions that were analyzed qualitatively.

The data were analyzed using a MANOVA for the data from the questionnaire. The qualitative data were analyzed by transcribing the open-ended responses and categorized and coding the responses. The qualitative data were analyzed using themes revealed in the written responses. Results of the data analysis indicated that preservice teachers had limited interactions with people who differed from them in terms of backgrounds or ability levels. In addition, the preservice teachers had limited knowledge of historical contributions made by individuals from diverse backgrounds. The qualitative
data indicated that the preservice teachers wanted to be effective teachers to all learners, however they lacked the knowledge or experiences to do so.

Taylor and Sobel (2001) concluded that preservice teacher programs must develop teacher understanding, knowledge, skills, and awareness of student diversity. They recommend that future research be conducted on the connection between beliefs and attitudes and the resulting impact on preservice teacher practice in the field.

Paneque and Barbetta (2006) conducted a study to examine the efficacy of special education preservice teachers working with ELL students with disabilities. The participants were 202 preservice elementary special education teachers from 31 elementary schools that contained a high population of ELL students with disabilities.

Paneque and Barbetta (2006) used a survey design. The survey contained three sections: (a) 20 items focused on teacher perception of their ability to work with ELL students with disabilities, (b) three open-ended questions dealing with recommendations for working with ELL students with disabilities, and (c) general demographic information.

Data were analyzed using t-test. The data from teacher responses were analyzed using a t-test. The qualitative responses were coded and categorized, analyzing the response for common words, phrases, ideas, and themes. Results of the data analysis indicated overall high scores for teacher efficacy. The preservice teachers indicated that they were sensitive to and aware of the needs of ELL students with disabilities. The qualitative data indicated a high correlation between language proficiency and teacher efficacy, meaning the better the language skills of the ELL students, the higher the teacher efficacy. For recommendations for preservice teachers, the overarching theme
was the field-based experiences should be required for preservice teachers with ELL student with disabilities. In addition, the teachers suggested that preservice teacher programs support teachers in the development of second language skills, with a focus on bilingual special education programs.

Paneque and Barbetta (2006) concluded that preservice teacher programs need to include curricula and instructional strategies to meet the needs of English language learners with disabilities. In addition, preservice teachers need field based experiences with students who are ELL students with disabilities. Paneque and Barbetta (2006) recommend that future research be conducted on teacher efficacy for teachers who teach ELL students with disabilities.

In summary, it is imperative to provide high quality instruction to ELLs and this process begins in preservice education. The goal is to provide preservice teachers with appropriate skills in the design and implementation of appropriate curriculum for students learning English. Research supports the need for preservice teacher training and to ensure they are prepared to meet the needs of ELLs (Menken & Antunez, 2001; Durgunoglu & Hughes, 2010; Lobman & McLaughlin, 2005).

**In-Service Teacher Education in English Language Instruction**

The success of educational reforms depend on school districts hiring highly qualified teachers for all students, including ELLs with and without disabilities (Menken, & Antunez, 2001; Ballantyne, Sanderman, & Levy, 2008). In order to continue the development of highly qualified teachers, districts must provide effective professional development training for teachers of ELL students. Educators must obtain further
knowledge concerning culture, content, and language learning necessary to meet the need of ELLs (Youngs & Youngs 2001; Baca, & Cervantes, 2004).

**General Education**

It is essential that teachers have formal and informal training to work with ELLs. Teachers that are fully trained are more effective than teachers who have the minimum qualifications. Teachers with high quality training reflect positively on student achievement (Menken & Antunez, 2001; Samson & Collins, 2012).

Youngs and Youngs (2001) conducted a study to describe the attitudes of general education teachers working with ELL students. Five components were examined: (a) educational background, (b) ELL training, (c) personal contact with foreign cultures, (d) contact with ELL students, and (e) demographic characteristics. The participants were 143 junior high/middle school general education teachers.

A survey was distributed in two junior high schools and one middle school. The data were analyzed using a multiple regression equation in which five survey components were incorporated. Results of the data analysis indicated that teachers were neutral towards teaching ELL students, they felt neither positively or negatively towards the students. However, the general education teachers tended to have a more positive attitude toward ELLs if they had training in a foreign language or took multicultural education courses. The teachers who had received some type of ELLs training were significantly more positive about teaching ELLs than those that reported no training. Female teachers had a significantly more positive attitude towards working with ELL students.
Youngs and Youngs (2001) concluded the high need for strong in-service training that exposes teachers to diversity through multicultural courses, ELL training, and the opportunity to work with culturally diverse students. Youngs and Youngs (2001) recommend that future research be conducted on additional predictors to better understand teacher attitudes toward diverse groups and students learning English.

Karabenick and Noda (2004) investigated a districtwide assessment of teacher beliefs, attitudes, and practices concerning ELL related issues, and the differences between teachers who were either more or less accepting of ELLs in their classrooms. The participants were 729 teachers from elementary, middle school, and high schools across a suburban school district.

A survey was created using a 5-point Likert scale and focused on teacher knowledge, attitudes, beliefs, behaviors that impact the provision of quality educational services to ELLs, and teacher efficacy. The questionnaire consisted of 78 items.

The data were analyzed using a factor analysis and estimates of internal consistency to derive scales, were constructed by averaging the responses. The data indicated that the teachers scored in the lower quartile of the ELL efficacy scale. The teachers lacked confidence in their ability to adapt their instruction for ELLs. However, teachers with a positive attitude toward students learning English were more likely to believe they were capable of providing quality instruction for ELLs. Data also indicated that teachers believed they were significantly less able to teach ELL students than to teach students from whom English was their primary language.

Karabenick and Noda (2004) concluded that inservice should focus on training in building skills, expanding resources, and enhancing teacher self-efficacy to better work
with the ELL population. They recommend that teachers receive intensive inservice training to assist with content knowledge and instructional skills to support quality practices in teaching ELLs.

Reeves (2006) conducted a study to examine the experience of secondary teachers with ELL students and to explore their attitudes and perceptions of including ELLs in the general education classroom. A total of 279 teachers were invited to complete a survey indicating if they were content area teachers and were teaching at a high school.

A survey was developed to measure four areas of teacher agreement with including ELL students, the frequency of teaching behaviors focusing on ELL students, open-ended questions concerning teacher benefits and challenges concerning the inclusion of ELL students, and demographic information. A Likert-type scale was used that ranged from 1-for strongly agree to 4 strongly disagree.

The data were analyzed using Univariate analyses of the survey data in which one variable at a time was examined. Results of the data analysis indicated that four specific areas emerged: (a) a discrepancy existed between teachers’ general attitudes toward ELL inclusion and their attitudes toward specific aspects of ELL inclusion, (b) the teachers expressed concern about the equitability of coursework modifications for ELLs, (c) the teachers indicated an ambivalence toward participating in professional development to work with ELLs, and (d) the teachers did not understand or have knowledge of how a second language was learned.

Reeves (2006) concluded the districts must provide adequate teacher inservice training so that educators have the skills to work with ELLs and improve student outcomes. She recommends that educators gain more experience with skills, strategies,
and methods to assist ELLs in narrowing the achievement gap between fluent English speakers and ELLs. The need for educators to be trained is necessary especially in the areas of diversity, cultural, linguistics, and learning strategies.

**Special Education**

It is important that educators be able to distinguish if an ELL student has a disability and needs special education services or if he/she is struggling to learn the second language (Nguyen, 2012). Often teachers or schools lack the tools, training, procedures, or qualified staff to properly identify and serve ELLs and their needs (Artiles & Ortiz, 2002; Ballantyne, Sanderman, & Levy, 2008).

Prieto, Rueda, and Rodriguez (1981) explored methods to establish a competency-based inservice training program to assist teachers of bilingual/multicultural exceptional children. A needs assessment survey was created to ascertain the training wanted by teachers to teach the bilingual/multicultural exceptional child. There were 77 teachers who were instructing bilingual/multicultural exceptional children who participated.

The survey consisted of a 5-point Likert scale to assess the degree of importance teachers felt toward training competencies to work with bilingual/multicultural exceptional children. Eighteen competencies were included in the survey.

Results of the data analysis indicted that the mean scores ranged from 3.3 to 4.5, with teachers indicating they believed it was important to know how to involve the parents of bilingual/multicultural exceptional children in the education process, to assess bilingual/multicultural exceptional students using classroom performance assessments, and to apply specific interventions when teaching bilingual/multicultural exceptional children.
Prieto et al. (1981) concluded that inservice training in the areas of assessment, reading methods, and parent involvement should be provided to educators working with bilingual/multicultural exceptional children. They recommend that further research be conducted that focuses on identified teacher needs while they are in the work place as needs change overtime.

Mueller, Singer, and Carranza (2006) collected a national sample of special educator opinions concerning the assessment and language instructional practices for English language learners with moderate to severe disabilities. A total of 750 surveys were mailed nationally to members of The Association for Persons with Severe Disabilities (TASH). There was a return rate of 50% with 337 of the surveys being completed. Mueller, Singer, and Carranza (2006) used current literature pertaining to ELLs in special education and general education to construct the survey.

The data were analyzed using descriptive statistics, means, standard deviations, and percentages. Data analysis indicated that the majority of the respondents were not formally trained to work with ELLs. Only 37% reported receiving any perservice or inservice education to work with this student population. In addition, 36% indicated having no second language proficiency. Further data analysis indicated that 82-88% of the respondents used English as the means for expressive and receptive language instruction.

Mueller et al. (2006) concluded that training to work with students with moderate to severe disabilities who are ELLs is greatly needed. The data indicated that 63% of respondents were underprepared to work with ELLs. They recommend that future
research be conducted to explore the instructional practices that teachers believe they need to work with ELL students.

Shyyan, Thurlow, and Liu (2008) conducted a study to explore the instructional approaches for improving the educational achievement of ELLs with disabilities. The study focused on reading, mathematics, and science instructional strategies found to be effective for ELLs with disabilities at the middle school level.

The study was conducted in three stages. In stage one, 20 teachers, coordinators, and other educators participated. In stage two, the participants included 42 educators from eight schools in two urban and five suburban districts. In stage three, the participants were 25 Hmong students with disabilities all were participating in ELL programs.

Shyyan et al. (2008) used a Multi-Attribute Census Building (MACB) design and the study lasted two years. Three instruments were used in this study, a demographic survey for educators and students, instruments to gather weightings of the importance of instructional strategies, and a feasibility survey. The participants in stage one generated reading, mathematics and science instructional strategies and then completed the survey on strategy use and feasibility levels. In stage two, the lists of generated instructional strategies were weighted by the teachers on the importance of reading, mathematics, and science strategies using the MACB approach. In stage three, a comparable MACB process was used with the students, a simple version was used.

Results of the data analysis indicated that educators weighted reading as most important, then mathematics, and science was least important. The Hmong students with disabilities ranked mathematics first followed by reading, and science. As for importance
of instructional strategies the educators and students both selected three reading strategies as important: (a) fluency building, (b) direct teaching of vocabulary through listening, seeing, reading, and writing, and (c) practicing paraphrasing and retelling. The educators also selected two other strategies as important: (a) relating reading to student experiences, and (b) chunking and questioning aloud. For mathematics, the educators and students indicated that problem solving instruction and task analysis were important. In addition, for science, both educators and students indicated that using visuals in the content area of science was an important instructional strategy.

Shyyan et al. (2008) concluded that the perceived importance of effective instructional strategies for ELLs with disabilities were in the areas of math, science and reading. In addition, it is important for educators to have professional development opportunities to discuss strategies that are effective for ELLs with disabilities. They recommend that standards-based instruction for ELL students with disabilities be improved.

In summary, the research supports the need for practicing educators to continue learning while they are teaching (Mueller et al., 2004; Reeves, 2006). Educators need more experience with skills, strategies, and methods to assist ELLs in narrowing the achievement gap between them and fluent English speakers (Prieto et al., 1981; Karabenick & Noda, 2004; Reeves, 2006; Shyyan et al., 2008). The need for educators to continually be trained is necessary throughout their educational career (Prieto et al., 1981; Youngs & Youngs, 2001; Mueller et al., 2006).
Summary

The population of students for whom English is not their first language continues to rise in the United States. Because all educators at some point in their teaching career will work with ELL students, education (both preservice and inservice) must prepare teachers to provide effective instruction to this population (Echevarria, Short, & Powers, 2006; Baca, & Cervantes, 2004). The need to prepare general and special educators to provide successful instruction for ELLs is crucial now and in the future for positive learning outcomes (Shyyan et al., 2008; Youngs & Youngs, 2001).

The study was designed to examine the type and level of training in English language learning strategies provided to special and general educators in their teacher education programs and school-based in-service training. This study will assist developers of preservice teacher education programs and school-based inservice training with information for the design of in-depth coursework and targeted professional development for educators. The ultimate goal being to provide an appropriate education to ELL students (Menken & Antunez, 2001; Ballantyne, Sanderman, & Levy, 2008).
CHAPTER THREE

METHODOLOGY

Overview

The purpose of this study was to examine the level and type of training in English language learning strategies provided to special and general educators in their teacher education programs and school-based inservice training. Thirteen universities participated in the study: Arizona State University; California State University, Fullerton; California State University, Monterey Bay; Eastern Illinois University; Emporia State University; San Diego State University; Southern Connecticut State University; St. Cloud State University; University of Georgia; University of Massachusetts, Amherst; University of Nevada, Las Vegas; University of North Carolina, Greensboro, and Wichita State University. Convenience sampling was used in the design of the study concerning the selection of universities sites. The participants represented practicing teachers from rural, town, suburban, and city areas (NCES, 2012).

Research Questions

Data were collected using an online questionnaire that focused on the direct and incidental instruction concerning English language learning instruction provided to special and general educators in their teacher education programs and school-based inservice training. The following questions were asked:

Research Question 1: Do special education teachers receive more training in the English language learning categories of language development than general education teachers in their preservice education program?
It was predicted that special education teachers receive a limited amount of instruction concerning English language learning categories of language development in their preservice education program.

**Research Question 2:** Do special education teachers receive more training in the English language learning categories of language development than general education teachers in their inservice training?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning categories of language development in their inservice training.

**Research Question 3:** Do special education teachers receive more training in the English language learning sheltered instructional models than general education teachers in their preservice education program?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning sheltered instructional models in their preservice education program.

**Research Question 4:** Do special education teachers receive more training in the English language learning sheltered instructional models than general education teachers in their inservice training?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning sheltered instructional models in their inservice training.
Research Question 5: Do special education teachers receive more training in the English language learning reading strategies than general education teachers in their preservice education program?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning reading strategies in their preservice education program.

Research Question 6: Do special education teachers receive more training in the English language learning reading strategies than general education teachers in their inservice training.

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning reading strategies in their inservice training.

Research Question 7: Do special education teachers receive more training in the English language learning math strategies than general education teachers in their teacher preservice program?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning math strategies in their preservice education program.
**Research Question 8:** Do special education teachers receive more training in the English language learning math strategies than general education teachers in their inservice training?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning math strategies in their inservice training.

**Research Question 9:** Do special education teachers receive more training in the English language learning science strategies than general education teachers in their preservice education program?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning science strategies in their preservice education program.

**Research Question 10:** Do special education teachers receive more training in the English language learning science strategies than general education teachers in their inservice training?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning science strategies in their inservice training.

**Participants**

The online questionnaire was completed by general and special education teachers. The participating teachers, invited to participate in the study, were enrolled in degree programs or licensure programs at universities in rural, town, suburban, and city
areas nationwide. The participants were teachers who taught in a variety of educational settings (special and general education) and grade levels (elementary and secondary).

**Special and General Education Teachers**

The special education and general education teachers who participated in the study were enrolled in a degree or licensure programs in curriculum and instruction (elementary or secondary) or special education. All teachers were currently teaching. Teacher demographic information were collected (see Table 1). All participants completed a digital informed consent form prior to accessing and completing the online questionnaire. Digital consent is considered legal consent (Dr. L. Olafson, Office of Research Integrity, personal communication, September 5, 2012) (see Appendix B).

**University Facilitators**

Thirteen special education professors from a convenience sample of rural, urban, suburban, and Colleges of Education were invited to participate in this study. These universities facilitators were selected, because they were readily available and convenient. The thirteen special education facilitators invited one general education professor to assist in disseminating the surveys to special and general educators. Thus, there were a total of 26 facilitators. All university facilitators signed an informed consent form prior to participating in the study (see Appendix C). Demographic information was collected from the university facilitators (see Table 2).
Setting

Thirteen Colleges of Education were invited to participate in the study. The universities were representative sample of universities located across the United States in rural, town, suburban, and city areas (NCES, 2012).

Participating Universities

University professors were contacted via email and their participation as a data-collection site solicited. Once agreement to participate was received, the professor was emailed a notification to recruit volunteers form created by the UNLV Institutional Review Board (IRB) to have signed by their department chairs. This consent form allowed the study to access the university to solicit volunteers (see Appendix D). The UNLV IRB used this volunteer solicitation form in lieu of going through the IRB at each university (Dr. L. Olafson, Office of Research Integrity, personal communication, September 5, 2012).

Professors and department chairs from the following universities agreed to participate:

Arizona State University (ASU), located in the Phoenix metro area, has an enrollment of 72,254 students (58,404 undergraduate and 6,776 graduate) (NCES, 2012a). The Mary Lou Fulton Teachers College has 5,672 students (Arizona State University, 2012).

California State University, Fullerton (CSUF), located in Orange County, California has an enrollment of 36,156 students (30,782 undergraduate students and 5,374 graduate students) (NCES, 2012b). The College of Education at CSUF has only
graduate degrees in education. There are 824 graduate students enrolled. (California State University, Fullerton, 2012).

California State University, Monterey Bay (CSUMB) is located in Seaside, California. It has an enrollment of 5,173 students (4,806 undergraduate and 367 graduate) (NCES, 2012c). The teacher education program at CSUMB is a graduate degree program only with an enrollment of 45 graduate students (California State University, Monterey Bay, 2012).

Eastern Illinois University (EIU) is located in Charleston, Illinois. The university has an enrollment of 11,178 students (9,657 undergraduate and 1,521 graduate students) (NCES, 2012d). There are 3,222 students enrolled in the College of Education and Professional Studies at EIU (Eastern Illinois University, 2012).

Emporia State University (ESU) is located in Emporia, Kansas with an enrollment of 5,976 students (3,846 undergraduate and 2,130 graduate) (NCES, 2012e). The ESU Teachers College has an enrollment of 2,372 students (Emporia State University, 2012).

San Diego State University (SDSU) is located in San Diego, California with an approximate enrollment of 30,541 students (25,796 undergraduate and 4,745 graduate) (NCES, 2012f). The SDSU School of Leadership and Education Sciences currently has 1,045 students registered (San Diego State University, 2012).

Southern Connecticut State University (SCSU) is located in New Haven, Connecticut and currently has a student population of 11,533 students (8,696 undergraduate and 2,837 graduate) (NCES, 2012g). The SCSU School of Education Southern has 2,077 students enrolled (Connecticut State University, 2012).
St. Cloud State University (SCSU) is located in St. Cloud, Minnesota and has a student population of 17,604 (15,879 undergraduate and 1,725 graduate) (NCES, 2012h). The School of Education currently has 692 students enrolled (St. Cloud State University, 2012).

University of Georgia (UGA) is located in Athens, Georgia with a student enrollment of 34,816 (26,373 undergraduate and 8,443 graduate) (NCES, 2012i). The UGA College of Education has 4,575 students enrolled (University of Georgia, 2012).

The University of Massachusetts, Amherst (UMA) has 28,084 students enrolled (21,812 undergraduate and 6,272 graduate) (NCES, 2012j). The UMA School of Education has approximately 672 students enrolled (University of Massachusetts Amherst, 2012).

The University of Nevada, Las Vegas (UNLV) has an enrollment of 27,364 students (22,137 undergraduate and 5,227 graduate students) (NCES, 2012k). The UNLV College of Education has 2,433 students enrolled (University of Nevada, Las Vegas, 2012).

University of North Carolina, Greensboro (UNCG) is located midway between Washington, D.C. and Atlanta and has an enrollment of 18,627 students (14,898 undergraduate and 3,729 graduate) (NCES, 2012l). The UNCG School of Education has an enrollment of 2,066 students (University of North Carolina Greensboro, 2012).

Wichita State University (WSU) is a public university located in Wichita, Kansas with an enrollment of 14,909 students (12,106 undergraduate and 2,803 graduate) (NCES, 2012m). The WSA College of Education has a student population of 1,887 students (1,268 undergraduate and 619 graduate) (Wichita State University, 2012).
Instrumentation

The questionnaire used in this study was adapted from the report *Educator Perceptions of Instructional Strategies for Standards-Based Education of English Language Learners with Disabilities: ELL with Disabilities* from the National Center on Educational Outcomes (NCEO) (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004). The questionnaire contained 36 items, broken down into five groups: (a) language development, (b) sheltered instructional models, (c) reading strategies, (d) math strategies, and (e) science strategies.

The National Center on Educational Outcomes (NCEO) provides national leadership in designing and building educational assessments and accountability systems that monitor educational outcomes for all students. This includes students with disabilities and English language learners (NCEO, 2012). The NCEO (2004) conducted a study to identify research-based instructional strategies effective with ELL students as well as a survey with teachers concerning the use of the identified strategies. The results were codified into items by the Center for use by teachers. These items formed the basis of the questionnaire that was used in this study.

The National Center on Educational Outcomes (NCEO) granted permission to use the strategy items identified by teachers (see Appendix E). The top 10 items from each category (e.g., reading, math, science) were selected based on the highest means reported by teachers and researchers (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004). The questionnaire was designed to allow special and general educators to provide their perceptions of the direct or indirect level of English language learning instruction.
provided in their teacher education programs and school-based inservice training (see Appendix F).

**Materials**

Several materials were used in this study. These materials included the English language learning questionnaire and a web-based online tool *Qualtrics* (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004; Qualtrics Labs Inc., 2012).

The questionnaire English Language Learning Questionnaire was developed for the study (see Appendix F) to ascertain the level and type of training in English language learning strategies provided to special and general educators in their teacher education programs and school-based inservice training. The focus of the 36-item questionnaire was on English language learning strategies and whether the teachers received incidental, direct, or no instruction on the specific skills in teacher education or inservice training. For each item, the teacher indicated on a 5-item, Likert scale whether instruction was: (a) was never mentioned and a strategy was never taught (b) was mentioned, but no specific strategy was taught, (c) was mentioned and strategies were mentioned incidentally, (d) was mentioned and a specific strategy was discussed, (e) was mentioned and a specific strategy was taught through direct instruction. The questionnaire contained five groups of questions: (a) language development, (b) sheltered instructional models, (c) reading strategies, (d) math strategies, and (e) science strategies.

The questionnaire was created using the *Qualtrics* survey program (Qualtrics Labs Inc., 2012). The questionnaire was posted on-line through a dedicated URL address.

**Website**

The online questionnaire was accessible to the participants for a four-month period. Teachers who volunteered to participate were given a URL address to access the
questionnaire. Data acquired was categorized and maintained electronically. Access to the information from the questionnaire was limited to two people. The information obtained was used for the purpose of statistical analysis and dissemination of information pertaining to and limited to this study.

**Design and Procedures**

This study was conducted over a four-month period and consisted of four phases. The phases consisted of the following stages: on-line questionnaire development, participant solicitation, questionnaire distribution, data collection and analysis.

**Phase One**

The National Center on Educational Outcomes (NCEO) was contacted to request permission to use items identified in the report *Educator Perceptions of Instructional Strategies for Standards-Based Education of English Language Learners with Disabilities report* (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004) (see Appendix E). The questionnaire included questions focusing on: (a) categories of language development, (b) sheltered instructional models, (c) reading strategies, (d) math strategies, and (e) science strategies (see Appendix F).

The *Qualtrics* survey program (Qualtrics Labs Inc., 2012) was used to convert the paper questionnaire into the digital format that was accessible online. The site allowed up to 1,000 educators to have on-line access. The website contained a dedicated URL address for participants to access the questionnaire. The paper questionnaire was transferred to the online format using *Qualtrics* (Qualtrics Labs Inc., 2012). Two reliability checkers reviewed the online questionnaire to ascertain that the questionnaire
was transferred correctly to the digital format (see Appendix G). Reliability was set at 100%. The questionnaire was transferred to the online format with 100% accuracy.

The participants were prompted to give digital consent which was requested as the first item on the questionnaire (see Appendix B). Per the IRB, digital consent was considered to be a legal consent (Dr. L. Olafson, Office of Research Integrity, personal communication, September 5, 2012). Online consent was obtained by participants selecting “Yes, I have read the above information and agree to participate in this study. I am at least 18 years of age”. By clicking “yes,” the participant was directed to the questionnaire. The participant could quit at any time by shutting down the questionnaire. There was no penalty if the participant decided to quit the questionnaire. After the participant completed the questionnaire, they were not granted access to the questionnaire again.

**Phase Two**

Thirteen special education professors from a convenience sample of rural, town, suburban, and city Colleges of Education were invited to participate in this study. The professors served as site facilitators and invited one professor from general education to participate in this study with them. The professors who agreed to participate completed an informed consent form (see Appendix C). The participating universities signed a site approval letter giving consent to recruit research volunteers (see Appendix D). The site consent form granted the study access to the participating universities to recruit volunteers (see Appendix D).

Each university had two faculty facilitators (general and special education) who identified one course scheduled during the fall of 2012 and spring of 2013 in which there
were at least 20 students. Each facilitator read the study protocol description to the students and stressed that participation was voluntary and would not have any impact on their grade in the class (see Appendix H). The university facilitators passed out a hard copy of the protocol that provided the URL to access the online questionnaire. The protocol description was sent in conjunction with two other studies in order to maximize the participant responses for all studies (Dr. L. Olafson, personal communication, September 5, 2012)

**Phase Three**

The university facilitators provided written instructions to participants concerning the purpose of the study, accessing the questionnaire, and completing the on-line questionnaire. Participants were directed to the questionnaire website at which informed consent was completed prior to accessing or completing the survey. The online consent form was considered to be a legal document (Dr. L. Olafson, Office of Research Integrity, personal communication, September 5, 2012). Once the participants complete the questionnaire, they were not able to access it again.

**Phase Four**

The online questionnaire was accessible for a four-month period. During this time, participant responses were downloaded into a database. Data from the questionnaire were entered into a statistical program, *Statistical Package for the Social Sciences* (SPSS) for analysis.
Data Collection

Data from the questionnaire were collected through the online database for four-months. The university facilitators assisted in soliciting participants at least four times in the fall 2012 and four times in spring 2013.

Treatment of the Data

Data from the teacher questionnaire were analyzed to answer the following questions:

**Research Question 1:** Do special education teachers receive more training in the English language learning categories of language development than general education teachers in their preservice education program?

**Analysis:** In order to determine if a significant relationship existed between the level of instruction among the English language learning categories of language development and type of teacher (general education and special education) provided in their preservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

**Research Question 2:** Do special education teachers receive more training in the English language learning categories of language development than general education teachers in their inservice training?

**Analysis:** In order to determine if a significant relationship existed between the level of instruction among the English language learning categories of language development and type of teacher (general education and special education) provided in their inservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.
Research Question 3: Do special education teachers receive more training in the English language learning sheltered instructional models than general education teachers in their preservice education program?

Analysis: In order to determine if a significant relationship existed between the level of instruction among the English language learning sheltered instructional models and type of teacher (general education and special education) provided in their preservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

Research Question 4: Do special education teachers receive more training in the English language learning sheltered instructional models than general education teachers in their inservice training?

Analysis: In order to determine if a significant relationship existed between the level of instruction among the English language learning sheltered instructional models and type of teacher (general education and special education) provided in their inservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

Research Question 5: Do special education teachers receive more training in the English language learning reading strategies than general education teachers in their preservice education program?

Analysis: In order to determine if a significant relationship existed between the level of instruction among the English language learning reading strategies and type of teacher (general education and special education) provided in their
preservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

**Research Question 6:** Do special education teachers receive more training in the English language learning reading strategies than general education teachers in their inservice training.

**Analysis:** In order to determine if a significant relationship existed between the level of instruction among the English language learning reading strategies and type of teacher (general education and special education) provided in their inservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

**Research Question 7:** Do special education teachers receive more training in the English language learning math strategies than general education teachers in their teacher preservice program?

**Analysis:** In order to determine if a significant relationship existed between the level of instruction among the English language learning math strategies and type of teacher (general education and special education) provided in their preservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

**Research Question 8:** Do special education teachers receive more training in the English language learning math strategies than general education teachers in their inservice training?

**Analysis:** In order to determine if a significant relationship existed between the level of instruction among the English language learning math strategies and type
of teacher (general education and special education) provided in their inservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

**Research Question 9:** Do special education teachers receive more training in the English language learning science strategies than general education teachers in their preservice education program?

**Analysis:** In order to determine if a significant relationship existed between the level of instruction among the English language learning science strategies and type of teacher (general education and special education) provided in their preservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

**Research Question 10:** Do special education teachers receive more training in the English language learning science strategies than general education teachers in their inservice training?

**Analysis:** In order to determine if a significant relationship existed between the level of instruction among the English language learning science strategies and type of teacher (general education and special education) provided in their inservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.
CHAPTER FOUR

RESULTS

The population of English language learners (ELLs) is growing in the United States, with a 43% increase between 2000-2010 (U.S. Census, 2011). This demographic shift has led to an increase in students who begin school speaking a language other than English. The number of students who do not speak English upon entering school has increased from 4.7 to 11.2 million from 1980-2009 (NCES, 2012). The literature indicates that these students are over represented in special education classrooms and often achieve at a lower academic level than their English speaking peers (Hosp & Reschly, 2004). Recent national data indicates that the achievement gap between English and non-English learners in school is, on average, 20 points for math and reading assessments or approximately a two grade-level difference (NCES, 2012).

Teachers play a crucial role in the lives of children and youth. Current research indicates that a contributing factor to this achievement gap may be the lack of teacher training in the area of appropriate strategies to teach English language learners, particularly those with disabilities (Ortiz, 2001; Sullivan, 2011; Keller-Allen, 2006). Given the increased likelihood that general and special educators will have a student with a disability who is learning English in their classroom, the strengthening of teacher preparation is essential (Ballantyne, Sanderman, & Levy, 2008; Office of Special Education Programs, 2001). Thus, teacher education programs and school districts must meet the needs of these educators and provide appropriate training and professional development opportunities so that general and special educators are prepared for the changing school demographics predicted for the coming years.
The purpose of this study was to examine the level of training in English language learning strategies provided to special and general educators in their preservice education programs and school-based inservice training. Thirteen universities facilitators across the country volunteered to disseminate the questionnaire to over 520 licensed general and special education teachers enrolled in university degree programs. A total of 274 participants completed the questionnaire (see Table 1). Data were collected over a four month period and were analyzed using quantitative analyses.

**English Language Learning Questionnaire**

The English language learning Questionnaire used in this study was developed from the report *Educator Perceptions of Instructional Strategies for Standards-Based Education of English Language Learners with Disabilities: ELL with Disabilities* (see Appendix E) from the National Center on Educational Outcomes (NCEO) (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004). The focus of the 36-item questionnaire was on English language learning strategies and whether the teachers received incidental, direct, or no instruction on the specific skills in their preservice education program or inservice training. For each item, the participant indicated on a 5-item, Likert scale whether instruction was: (a) never mentioned and a strategy was never taught (b) mentioned, but no specific strategy was taught, (c) mentioned and strategies were mentioned incidentally, (d) mentioned and a specific strategy was discussed, (e) mentioned and a specific strategy was taught through direct instruction. The questionnaire contained five groups of questions: (a) language development, (b) sheltered instructional models, (c) reading strategies, (d) math strategies, and (e) science strategies. Descriptive data are
included for each question. The data from the questionnaire were analyzed to answer the following questions:

**Research Question 1:** Do special education teachers receive more training in the English language learning categories of language development than general education teachers in their preservice education program?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning categories of language development in their preservice education program.

**Analysis:** In order to determine if a significant relationship existed between the type of teacher (general education and special education) and the level of instruction among the English language learning categories of language development provided in their preservice education programs, a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

The results of the 2 x 5 Chi-Square Test of Independence indicated no significant relationship between the two variables in the subcategories of Basic Interpersonal Communication Skills (BICS) ($X^2 = 4.188, p=.381$), and Cognitive Academic Language Proficiency (CALP) ($X^2 = 4.129, p=.389$) (see Table 3). Percentages of teacher responses are in Table 4. In their preservice training, special education teachers do not receive more instruction in English language learning categories of language development than general education teachers. It appears that both general and special educators received similar amounts of training during their preservice training.
**Research Question 2:** Do special education teachers receive more training in the English language learning categories of language development than general education teachers in their inservice training?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning categories of language development in their inservice training.

**Analysis:** In order to determine if a significant relationship existed between the type of teacher (general education and special education) and the level of instruction for the English language learning categories of language development provided in their inservice training, a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

The results of the 2 x 5 Chi-Square Test of Independence indicated no significant relationship between the two variables in the subcategories of Basic Interpersonal Communication Skills (BICS) ($X^2 = 1.673, p = .796$), and Cognitive Academic Language Proficiency (CALP) ($X^2 = 3.500, p = .478$) (see Table 3). Percentages of teacher responses are in Table 4. In their inservice training, special education teachers did not receive more instruction in English language learning categories of language development than general education teachers. Both general and special educators received little inservice training.
**Research Question 3:** Do special education teachers receive more training in the English language learning sheltered instructional models than general education teachers in their preservice education program?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning sheltered instructional models in their preservice education program.

**Analysis:** In order to determine if a significant relationship existed between the type of teacher (general education and special education) and the level of instruction for the English language learning sheltered instructional models provided in their preservice education programs, a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

The results of the 2 x 5 Chi-Square Test of Independence indicated a significant relationship between the two variables in the subcategory of Specially Designed Academic Instruction in English (SDAIE) ($\chi^2 = 10.512, p = .033$) (see Table 5), Percentages of teacher responses are in Table 6. No significant relationship between the two variables in the subcategories of Cognitive Academic Language Learning Approach (CALLA) ($\chi^2 = 2.992, p = .559$); Sheltered Instruction Observation Protocol (SIOP) ($\chi^2 = 4.424, p = .352$); or Guided Language Acquisition Design (GLAD) ($\chi^2 = 6.096, p = .192$) was found.

Contrary to the prediction, in their preservice training, special education teachers did receive more instructional English language learning sheltered instructional models. Particularly in the subcategory of Specially Designed Academic Instruction in English (SDAIE) than did the general education teachers.
**Research Question 4:** Do special education teachers receive more training in the English language learning sheltered instructional models than general education teachers in their inservice training?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning sheltered instructional models in their inservice training.

**Analysis:** In order to determine if a significant relationship existed between the type of teacher (general education and special education) and the level of instruction for the English language learning sheltered instructional models provided in their inservice training, a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

The results of the 2 x 5 Chi-Square Test of Independence indicated no significant relationship between the two variables in the subcategories of Cognitive Academic Language Learning Approach (CALLA) ($\chi^2 = .969, p = .914$); Specially Designed Academic Instruction in English (SDAIE) ($\chi^2 = 8.002, p = .092$); Sheltered Instruction Observation Protocol (SIOP) ($\chi^2 = 4.882, p = .300$); and Guided Language Acquisition Design (GLAD) ($\chi^2 = 4.377, p = .357$) (see Table 5). Percentages of teacher responses are in Table 6. In their inservice training, special education teachers did not receive more instruction on English language learning sheltered instructional models than general education teachers.
Research Question 5: Do special education teachers receive more training in English language learning reading strategies than general education teachers in their preservice education program?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning reading strategies in their preservice education program.

Analysis: In order to determine if a significant relationship existed between the type of teacher (general education and special education) and the level of instruction for the English language learning reading strategies provided in their preservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

The results of the 2 x 5 Chi-Square Test of Independence indicated a significant relationship between the two variables in the subcategories of fluency building ($\chi^2 = 16.505, p = .002$); related reading to student experiences ($\chi^2 = 11.244, p = .024$); chunking and questioning aloud ($\chi^2 = 10.523, p = .032$); practicing paraphrasing and retelling strategies ($\chi^2 = 16.104, p = .003$); graphic organizers such as semantic maps, story maps, concept maps ($\chi^2 = 12.694, p = .013$); and curriculum-based oral reading probe ($\chi^2 = 14.182, p = .007$) (see Table 7). Percentages of teacher responses are in Table 8. No significant relationship between the two variables in the subcategories of teaching pre-, during, and post-reading strategies ($\chi^2 = 8.168, p = .086$); direct teaching vocabulary through listening, seeing, reading, and writing in short-time segments ($\chi^2 = 7.061, p = .133$); use of organized pre-assessment strategies ($\chi^2 = 5.387, p = .250$); or cooperative learning ($\chi^2 = 4.112, p = .391$) was found.
Contrary to the prediction, in their preservice training special education teachers did receive more English language learning reading strategies in the subcategories of fluency building, related reading to student experiences, chunking and questioning aloud, practicing paraphrasing and retelling strategies, graphic organizers (e.g., semantic maps, story maps, concept maps), and curriculum-based oral reading probe than did general education teachers. This may be because many of the strategies are remedial interventions taught for students with disabilities.

**Research Question 6:** Do special education teachers receive more training in the English language learning reading strategies than general education teachers in their inservice training.

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning reading strategies in their inservice training.

**Analysis:** In order to determine if a significant relationship existed between the type of teacher (general education and special education) and the level of instruction for the English language learning reading strategies provided in their inservice training a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

The results of the 2 x 5 Chi-Square Test of Independence indicated no significant relationship between the two variables and teaching pre-, during, and post-reading strategies ($\chi^2=1.370, p=.849$); fluency building ($\chi^2=1.858, p=.762$); direct teaching vocabulary through listening, seeing, reading, and writing in short-time segments ($\chi^2=1.693, p=.792$); relating reading to student experiences ($\chi^2=.091, p=.999$); chunking and questioning aloud ($\chi^2=.551, p=.968$); practicing paraphrasing and retelling strategies
(\chi^2= 1.596, p=.809); graphic organizers (e.g., semantic maps, story maps, concept maps) 
(\chi^2= 1.144, p=.887); use of organized pre-assessment strategies (\chi^2= 2.221, p=.695); cooperative learning (\chi^2= 3.567, p=.468); and curriculum-based oral reading probe (\chi^2= 3.164, p=.531) (see Table 7), Percentages of teacher responses are in Table 8. In their inservice training, special education teachers did not receive more English language learning reading strategies than general education teachers. Both groups of teachers received limited inservice training concerning English language learning reading strategies.

**Research Question 7:** Do special education teachers receive more training in the English language learning math strategies than general education teachers in their teacher preservice program?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning math strategies in their preservice education program.

**Analysis:** In order to determine if a significant relationship existed between the type of teacher (general education and special education) and the level of instruction for the English language learning math strategies provided in their preservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

The results of the 2 x 5 Chi-Square Test of Independence indicated a significant relationship between the two variables in the subcategories of tactile, concrete experiences in mathematics (\chi^2= 24.498, p<.001); problem solving instruction and task analysis strategies (\chi^2= 19.153, p=.001); teacher “think alouds” (\chi^2= 12.460, p=.014);
student “think alouds” ($X^2 = 16.645, p=.002$); graphic organizers such as semantic mapping and concept mapping in word problems ($X^2 = 11.502, p=.021$); reciprocal peer tutoring (RPT) ($X^2 = 16.418, p=.003$); specific informal assessments based on curriculum ($X^2 = 23.321, p<.001$); and explicit timing ($X^2 = 15.393, p=.004$) (see Table 9).

Percentages of teacher responses are in Table 10. No significant relationship between the two variables in the subcategories of daily re-looping of previously learned material ($X^2 = 9.099, p=.059$), and adjusted speech ($X^2 = 15.393, p=.004$) were found.

Contrary to the prediction, in their preservice training special education teachers did receive more English language learning math strategies in the subcategories of tactile, concrete experiences in mathematics, problem solving instruction and task analysis strategies, teacher “think alouds”, student “think alouds”, graphic organizers (e.g., semantic mapping and concept mapping in word problems), reciprocal peer tutoring (RPT), specific informal assessments based on curriculum, and explicit timing than did general education teachers. It appears that general educators receive little preservice instruction in these areas.

**Research Question 8:** Do special education teachers receive more training in the English language learning math strategies than general education teachers in their inservice training?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning math strategies in their inservice training.

**Analysis:** In order to determine if a significant relationship existed between the type of teacher (general education and special education) and the level of instruction of
the English language learning math strategies provided in their inservice training a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

The results of the 2 x 5 Chi-Square Test of Independence indicated a significant relationship between the two variables in the subcategory of tactile, concrete experiences in mathematics ($X^2 = 17.141, p = .002$) (see Table 9). Percentages of teacher responses are in Table 10. No significant relationship between the two variables in the subcategories of daily re-looping of previously learned material ($X^2 = 1.775, p = .777$); problem solving instruction and task analysis strategies ($X^2 = 5.359, p = .252$); teacher “think-alouds” ($X^2 = 1.448, p = .836$); student “think-alouds” ($X^2 = 6.587, p = .159$); adjusted speech ($X^2 = 2.069, p = .723$); graphic organizers (e.g., semantic mapping and concept mapping in word problems) ($X^2 = 2.499, p = .645$); reciprocal peer tutoring (RPT) ($X^2 = 2.833, p = .586$); specific informal assessments based on curriculum ($X^2 = 3.063, p = .547$); or explicit timing ($X^2 = 6.626, p = .157$) were found.

Contrary to the prediction, in their inservice training special education teachers did receive more English language learning math instruction in the subcategory of tactile, concrete experiences in mathematics than did general education teachers. However, overall neither group of teachers received much instruction in English language math instruction in their inservice training.

**Research Question 9:** Do special education teachers receive more training in the English language learning science strategies than general education teachers in their preservice education program?
It was predicted that special education teachers receive a limited amount of instruction concerning English language learning science strategies in their preservice education program.

**Analysis:** In order to determine if a significant relationship existed between the type of teacher (general education and special education) and the level of instruction for the English language learning science strategies provided in their preservice education programs a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

The results of the 2 x 5 Chi-Square Test of Independence indicated a significant relationship between the two variables in the subcategories of modeling/teacher demonstration ($\chi^2 = 14.901, p = .005$); using pre-reading strategies in content areas ($\chi^2 = 14.901, p = .005$); and specific informal assessments based on curriculum ($\chi^2 = 20.370, p = .001$) (see Table 11). Percentages of teacher responses are in Table 12. No significant relationship between the two variables in the subcategories of hands-on, active participation ($\chi^2 = 2.1212, p = .713$); using visuals ($\chi^2 = 7.712, p = .103$); using pictures to demonstrate steps ($\chi^2 = 7.464, p = .113$); graphic organizers (e.g., semantic and conceptual mapping) ($\chi^2 = 8.668, p = .070$); use of short segments to directly teach vocabulary through listening, seeing, reading, and writing ($\chi^2 = 7.371, p = .118$); peer tutoring ($\chi^2 = 4.449, p = .349$); using response cards during instruction as a response to teacher questions ($\chi^2 = 6.885, p = .142$) was found. This may be because these are remedial instructional strategies typically taught in preservice special education programs.
Contrary to the prediction, in their preservice training special education teachers did receive more English language learning science strategies in the subcategories of modeling/teacher demonstration, using pre-reading strategies in content areas, and specific informal assessments based on curriculum than did general education teachers.

Research Question 10: Do special education teachers receive more training in the English language learning science strategies than general education teachers in their in-service training?

It was predicted that special education teachers receive a limited amount of instruction concerning English language learning science strategies in their in-service training.

Analysis: In order to determine if a significant relationship existed between the type of teacher (general education and special education) and the level of instruction for the English language learning science strategies provided in their in-service training a 2 x 5 Chi-Square Test of Independence was conducted. An alpha level of .05 was set.

The results of the 2 x 5 Chi-Square Test of Independence indicated no significant relationship between the two variables in the subcategories of hands-on, active participation ($X^2 = 3.644, p = .456$); using visuals ($X^2 = 3.955, p = .412$); using pictures to demonstrate steps ($X^2 = 5.926, p = .205$); modeling/teacher demonstration ($X^2 = 5.568, p = .234$); using pre-reading strategies in content areas ($X^2 = 4.708, p = .319$); graphic organizers (e.g., semantic and conceptual mapping) ($X^2 = 2.108, p = .716$); use short segments to directly teach vocabulary through listening, seeing, reading, and writing ($X^2 = 3.365, p = .499$); peer tutoring ($X^2 = 1.144, p = .887$); using response cards during instruction
as a response to teacher questions ($\chi^2 = .792, p=.940$); or specific informal assessments based on curriculum ($\chi^2 = 5.636, p=.228$) (see Table 11). Percentages of teacher responses are in Table 12. It appears that in their inservice training special education teachers did not receive more English language learning science instruction than did general education teachers. However, it appears that both groups of educators receive little inservice training in this area.
CHAPTER FIVE

DISCUSSION

The number of students for whom English is not their first language is rising in the United States as well as the number of ELL students with an Individualized Education Plan (IEP) (Klingner, Artiles, & Barletta, 2006). This emphasizes the achievement gap between students learning to speak English and those for whom English is their native language (Artiles, Rueda, Salazar, & Higareda, 2005). More general and special education teachers are called upon to work with students who do not possess the English skills to learn academically in the classroom (Artiles & Ortiz, 2002). Furthermore, teachers report that they do not have adequate training to provide appropriate educational services for these students (NCES, 2004; Shyyan, Thurlow & Liu, 2008). Without the proper instructional tools, teachers will be unable to provide appropriate instruction to students learning to speak English and these students will continue to fall further and further behind academically. In order to improve student outcomes and narrow the achievement gap for English language learners, teacher education must provide effective and relevant instruction from the preservice level to the inservice level so that all educators develop core competencies in addressing the learning needs of this unique population of students.

The purpose of this study was to examine the level of training in English language learning strategies provided to special and general educators in their preservice education programs and school-based inservice training. Comparisons were made between the type and area of instruction in English language learning strategies provided to special and general education teachers in their preservice and school-based inservice training. Data were collected using an online questionnaire that was developed from the report Educator
**Perceptions of Instructional Strategies for Standards-Based Education of English Language Learners with Disabilities: ELL with Disabilities** from the National Center on Educational Outcomes (NCEO) (Thurlow, Albus, Shyyan, Liu, & Barrera, 2004). The questionnaire contained 36 items, broken down into five groups: (a) language development, (b) sheltered instructional models, (c) reading strategies, (d) math strategies, and (e) science strategies. The questionnaire was used to measure the type of instruction that occurred in the two settings.

**Categories of Language Development**

Questions One and Two were analyzed to determine the level of instruction for the English language learning category of language development received by general and special education teachers in their preservice and inservice training programs. Question One centered on the level of instruction for the English language learning categories of language development provided in preservice programs and the type of teacher (general education and special education). The analysis indicated no significant relationship between the two groups in their preservice training in the area of language development. Apparently, there appears to be no difference in the amount of training in preservice education programs provided to special and general education teachers in English language learning language development, This is an area that requires further investigation as it appears that both groups of teachers are not trained.

Question Two analyzed the level of instruction for the English language learning category of language development provided in inservice training and type of teacher (general education and special education). The analysis indicated no significant relationship between the two groups in their inservice training concerning the English
language learning category of language development. Unfortunately, both general and special educators did not receive inservice training in this crucial area upon employment.

**Sheltered Instructional Models**

Questions Three and Four were analyzed to determine the level of instruction for the English language learning sheltered models received by general and special education teachers in their preservice and inservice training programs. Question Three focused on the level of instruction for the English language learning sheltered model provided in preservice programs and the type of teacher (general education and special education). The Standard Residual indicated that the source of the significant relationship was in the Mentioned/Instruction category for the following strategy: Specially Designed Academic Instruction (SDAIE) with 10.9% of the general education teachers receiving minimal training. The findings support current research that indicates teachers feel unprepared to teach ELLs (Reeves, 2006). This indicates a need for preservice general education programs to directly teach the skills, strategies, and methods to assist in narrowing the achievement gap between fluent English speakers and ELLs (Reeves, 2006; Ballantyne, Sanderman, & Levy, 2008).

The percentage of Not Mentioned for both general and special education teachers were greater in the subcategories of Cognitive Academic Language Learning approach (CALLA), Sheltered Instruction Observation Protocol (SIOP), and Guided Language Acquisition Design (GLAD). Both groups of teachers reported receiving no training in CALLA (special education 48.2%, general education, 50.4%), SIOP (special education 35.8%, general education 46.7%), and GLAD (special education 48.2%, general education 58.4%) in their preservice training. This may indicate that both general and
special education teachers have limited amount of preservice instruction and need additional training in providing instruction to ELLs as well as in implementing effective instructional models (Echevarria, Short, & Powers, 2006; Moughamian, Rivera, & Francis, 2009). Further training needs to be provided to general and special education teachers during their preservice instruction in these areas (Menken & Antunez, 2001; Lobman & McLaughlin, 2005).

Question Four identified the level of instruction for the English language learning sheltered instructional models provided in inservice training and type of teacher (general education and special education). The analysis indicated no significant relationship between the two groups for their inservice training with English language learning sheltered instructional models.

The percentages of Not Mentioned for both general and special education teachers for the category of English language learning sheltered instructional models indicated that there was no training provided in their inservice. This is an important finding in that both general and special educators received minimal training on the English language learning sheltered instructional models. This indicates that additional training during inservice education must be provided to general and special education teachers as these models are the basis of effective instruction for ELLs (Karabenick & Noda, 2004; Laine, 2009; Mueller, Singer & Grace, 2004).

**Reading Strategies**

Question Five and Six were analyzed to determine the level of instruction for the English language learning reading strategies received by general and special education teachers in their preservice and inservice training programs. Question Five focused on the
level of instruction for the English language learning reading strategies provided in preservice programs and the type of teacher (general education and special education). The Standard Residual indicated that the source of the significant relationship was in the Not Mentioned category for the following strategies: fluency building (with 19.0% of general education teachers needing more training); relating reading to student experiences (with 16.8% of general education teachers needing more training); chunking and questioning aloud (with 16.1% of general education teachers needing more training); practicing paraphrasing and retelling strategies (with 15.3% of general education teachers needing more training); graphic organizers such as semantic maps, story maps, concept maps (with 11.7% of general education teachers needing more training); and curriculum-based oral reading probe (with 24.8% of general education teachers needing more training). These findings may indicate that general education teachers are not receiving the remedial strategy training in reading that the special education teachers are receiving during their preservice teacher education programs. This outcome supports current research indicating that general education teachers do not feel prepared to teach ELLs and feel they need additional instructional skills (Karabenick & Noda, 2004). In addition, this finding also supports the need for general education teachers to be trained during their preservice education programs in specific reading strategies that will assist ELLs in building literacy to minimize the achievement gap (Carlo et al., 2008; McCallum et al., 2011; Menken & Antunez, 2001).

Question Six focused on the level of instruction for the English language learning reading strategies provided in inservice training and type of teacher (general education and special education). The analysis indicated no significant relationship between the two
groups in their inservice training concerning English language learning reading strategies instruction. This finding is problematic in that special educators who receive strategy training in their preservice program do not receive reinforcement in strategy usage upon employment and general educators who do not receive preservice training continue to be untrained while working with English language learners.

**Math Strategies**

Questions Seven and Eight were analyzed to determine the level of instruction for the English language learning math strategies instruction received by general and special education teachers in their preservice and inservice training programs. Question Seven focused on the level of instruction for the English language learning math strategies provided in preservice programs and type of teacher (general education and special education). The Standard Residual indicated that the source of the significant relationship was in the Not Mentioned category for the following strategies: tactile, concrete experiences in mathematics (with 24.8% of general education teachers needing more training); problem solving instruction and task analysis strategies (with 27.7% of general education teachers needing more training); teacher “think alouds” (with 16.1% of general education teachers needing more training); student “think alouds” (with 26.3% of general education teachers needing more training); graphic organizers such as semantic mapping and concept mapping in word problems (with 17.5% of general education teachers needing more training); reciprocal peer tutoring (with 46.0% of general education teachers needing more training); specific informal assessments based on curriculum (with 43.1% of general education teachers needing more training); and, explicit timing (with 54.7% of general education teachers needing more training). These findings may indicate
that general educators need additional training in their preservice education programs that focuses on providing effective math instruction to ELLs that includes a language component (Abedi, Lord, Hofstetter, & Baker, 2005; Bernardo, 2002; Durgunoglu & Hughes, 2010). Because most mathematics instruction occurs in the general education classroom, this finding is particularly troubling. Without the use of specific math interventions, English language learners will not be provided access to the general education curriculum (Moughamian, Rivera, & Francis, 2009).

Question Eight focused on the level of instruction for the English language learning math strategies provided in inservice training and the type of teacher (general education and special education). The Standard Residual indicated that the source of the significant relationship was in the Not Mentioned level for the strategy of tactile, concrete experiences in mathematics (with 37.2% of general education teachers needing more training). This finding suggests that general education teachers need additional training in their inservice programs concerning the use of tactile, concrete experiences in mathematics to further provide ELLs access to the math curriculum (Shyyan et al., 2008; Youngs & Youngs, 2001).

**Science Strategies**

Questions Nine and Ten were analyzed to determine the level of instruction for the English language learning science strategies instruction received by general and special education teachers in their preservice and inservice training programs. Question Nine explored the level of instruction for the English language learning science strategies provided in preservice programs and the type of teacher (general education and special education). The Standard Residual indicated that the source of the significant relationship
was with the Mention/Instruction level for: modeling/teacher demonstration (with 38% of general education teachers receiving minimal training) and using pre-reading strategies in content areas (with 32.8% of general education teachers receiving minimal training).

These findings indicate that general education teachers need additional science strategy instruction during their preservice education programs to increase ELLs academic performance in science. The data supports the need for general education teachers to be trained during their preservice education programs in the use of modeling, pre-reading, and other instruction tools that will assist ELLs in gaining access to the science curriculum (Duran et al., 1998; Durgunoglu & Hughes, 2010).

Question Ten explored the level of instruction for the English language learning science strategies provided in inservice training and the type of teacher (general education and special education). The analysis indicated no significant relationship between the two groups in their inservice training with English language learning science strategies. This indicates that general and special educators both need inservice training geared specifically for teaching science to English language learners.

**Conclusions**

There are six conclusions that can be drawn from his study. They are based on the quantitative data that were collected. The limitations of this study should be considered when evaluating these conclusions.

1. General education and special education teachers receive a limited amount of instruction concerning the English language learning category of language development in their inservice training.
2. General education and special education teachers receive a limited amount of instruction concerning English language learning sheltered instructional models in their preservice education program and inservice training.

3. Special education teachers do receive more training in the English language learning sheltered instructional model in their preservice education program in the subcategory of Specially Designed Academic Instruction in English (SDAIE) than do general education teachers.

4. Special education teachers receive more overall English language learning reading strategy instruction in their preservice education program than do general education teachers.

5. Special education teachers receive more overall English language learning math strategy instruction in their preservice education program than do general education teachers.

6. Special education teachers receive more overall English language learning science strategy instruction in their preservice education program than do general education teachers.

**Recommendations for Further Study**

This study indicates that general and special education teachers continue to need additional training in providing strategic and appropriate intervention to ELLs that will lead to high levels of academic achievement. The importance of training educators to meet the instructional needs of an increasingly larger group of school-age students is necessary. Problems with language and its impact on academic instruction must be met
with effective educational strategies (Hart, 2009). Based on the results of this study, the following recommendations are suggested for further study.

1. Further research should focus on the development of inservice training programs for general education and special education teachers in the area of English language learning of language development.

2. Further research should focus on the development of preservice education program and inservice training, specifically in the area of English language learning sheltered instructional models.

3. Further research should focus on the development of preservice teacher training programs for general education teachers focusing on English language learners in the areas of reading, math and science strategies.

4. A replication of this study should be conducted to analyze the types of inservice education programs for special and general education teachers throughout the nation to identify areas in which educators need more ELL support.

5. A replication of this study should be conducted to analyze the types of inservice education programs for special and general education teachers in their current school district to identify areas in which educators need more support.

6. A qualitative component should be added onto this study to further examine the components of English language learning strategies teachers believe are valuable and the strategies that seem to work well in the classroom.

7. Further research should focus on English language learning strategies for students with learning disabilities in the areas of reading, math, and science. Comparisons
should be made across elementary, middle, and high school learning environments.

8. Further research should compare the actual classroom implementation of English language learning strategies in the general and special education classrooms.

9. Further research should focus on English language learning strategies in the area of reading, math, and science for English language learners with gifts and talents.

10. Further research should be conducted to follow up on the implementation of ELL inservice instruction in the general and special education classrooms.

11. Further research on the type of courses (e.g., pedagogy, cultural, or linguistic) that focus on English learning strategies required for licensure should be conducted.

Summary

Increasingly, general and special education teachers are called upon to work with students who did not possess the English skills to achieve academically in the classroom (Artiles & Ortiz, 2002). Yet, teachers report that they do not have adequate training to provide appropriate educational services for these students (NCES, 2004). Without the proper instructional tools, teachers will be unable to provide appropriate instruction to students learning to speak English and these students will continue to fall further and further behind. If the goal is to provide equitable education to all, educators must be prepared to meet the unique learning needs of this particular group of students.

This study contributes to the current knowledge base by providing evidence concerning the lack of inservice instruction provided to general education teachers in the areas of English language learners and reading, math and science strategies. In addition, both general and special education teachers report a lack of knowledge in the area of
English language learning sheltered instructional models. This study raises the concern that general and special education teachers are not adequately prepared to provide English language learners appropriate instruction within a classroom setting.

Under the *No Child Left Behind Act* (2001), all teachers (general and special education) are responsible for ensuring that students are provided appropriate instruction in state content standards and meet high levels of achievement to the greatest extent possible. Teachers are accountable for providing an effective teaching environment in which students show learning growth. The findings from this study indicate that general and special education teachers lack training in their preservice education program and inservice training to work with English language learners. These results are important for the design of teacher training (preservice and inservice) and focusing on the improvement of student outcomes to narrow the achievement gap for English language learners.
Table 1

Demographics of Special and General Education Teacher

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Special Education Teachers</th>
<th>General Education Teachers</th>
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<tbody>
<tr>
<td><strong>Gender</strong></td>
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<tr>
<td>Male</td>
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<td>Female</td>
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<td>1</td>
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<tr>
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<tr>
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<td>4</td>
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<tr>
<td>Other</td>
<td>47</td>
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(continued)
Table 1

Demographics of Special and General Education Teacher

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<th>Characteristics</th>
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<td><strong>Teacher Education</strong></td>
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<tr>
<td>Bachelor’s Degree</td>
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<td>Master’s Degree</td>
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<td>Doctorate</td>
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<tr>
<td>4-10</td>
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<td>10 years or more</td>
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(continued)
Table 1

Demographics of Special and General Education Teacher

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<tr>
<th>Characteristics</th>
<th>Special Education Teachers</th>
<th>General Education Teachers</th>
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<tbody>
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<td><strong>Current Teaching Assignment</strong></td>
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<td>Resource Room</td>
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<td>Collaborative Consultant (CC/Co-op)</td>
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<td>Self-Contained Classroom</td>
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<td>0</td>
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<tr>
<td>Early Intervention</td>
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<td>Related Services</td>
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<td>General Education</td>
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<td><strong>Grades Taught</strong></td>
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<td>4-5</td>
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<td>9-12</td>
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(continued)
Table 1

Demographics of Special and General Education Teacher

<table>
<thead>
<tr>
<th>Disabilities Among Students Teachers Instruct</th>
<th>Special Education Teachers</th>
<th>General Education Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism</td>
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<tr>
<td>Deaf-Blindness</td>
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<td>7</td>
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<tr>
<td>Developmental Delay</td>
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<td>36</td>
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<tr>
<td>Emotional Disturbance</td>
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<td>67</td>
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<tr>
<td>Hearing Impairment</td>
<td>15</td>
<td>21</td>
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<tr>
<td>Intellectual Disabilities</td>
<td>48</td>
<td>50</td>
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<tr>
<td>Multiple Disabilities</td>
<td>45</td>
<td>27</td>
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<tr>
<td>Orthopedic Impairment</td>
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<td>9</td>
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<tr>
<td>Other Health Impairment</td>
<td>53</td>
<td>30</td>
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<tr>
<td>Specific Learning Disability</td>
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<td>75</td>
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<tr>
<td>Speech or Language Impairment</td>
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<td>64</td>
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<tr>
<td>Traumatic Brain Injury</td>
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<td>8</td>
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<tr>
<td>Visual Impairment/Blindness</td>
<td>16</td>
<td>19</td>
</tr>
</tbody>
</table>

(continued)
Table 1

*Demographics of Special and General Education Teacher*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Special Education Teachers</th>
<th>General Education Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In your teacher education program, did you ever receive training for working with ELLs?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>83</td>
<td>88</td>
</tr>
<tr>
<td>No</td>
<td>54</td>
<td>48</td>
</tr>
<tr>
<td><strong>Do you speak a second language in addition to English?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>55</td>
<td>40</td>
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<tr>
<td>I can speak 20-50 words in a second language</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>I can conduct a limited conversation in a second language</td>
<td>36</td>
<td>45</td>
</tr>
<tr>
<td>I am fluent in a language other than English</td>
<td>20</td>
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Table 2

Demographics of Special and General Education University Facilitators

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<tr>
<th>Characteristics</th>
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<th>General Education Facilitators</th>
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<td><strong>Gender</strong></td>
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<tr>
<td>Male</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td><strong>Years Teaching in</strong></td>
<td>6 years average</td>
<td>11 years average</td>
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<tr>
<td>Higher Education</td>
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Table 3

*Summary of Chi Square Test of Independence Statistics*

<table>
<thead>
<tr>
<th>Categories of Language Development</th>
<th>Preservice (n= 274 )</th>
<th>Inservice (n= 274 )</th>
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<tbody>
<tr>
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<td>X²</td>
<td>p</td>
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<tr>
<td>Basic Interpersonal Communication Skills (BICS)</td>
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</tr>
<tr>
<td>Cognitive Academic Language Proficiency (CALP)</td>
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</table>

*Note.* *p*<.05
Table 4

Percentages of Responses of Special Educators and General Educators for English Language Learning Categories of Language Development

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<th>Categories of Language Development</th>
<th>Special Educators</th>
<th>General Educators</th>
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<td>Inservice (n=137)</td>
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<tr>
<td>Basic Interpersonal Communication Skills (BICS)</td>
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<td></td>
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<tr>
<td>Mentioned/Instruction</td>
<td>21.9</td>
<td>12.4</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>26.3</td>
<td>46.0</td>
</tr>
<tr>
<td>Cognitive Academic Language Proficiency (CALP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>25.5</td>
<td>13.1</td>
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<tr>
<td>Not Mentioned</td>
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<td>48.9</td>
</tr>
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Note: *p<.05
Table 5

*Summary of Chi Square Test of Independence Statistics*

<table>
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<th>Sheltered Instructional Models</th>
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<th>Inservice (n= 274)</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>( p )</td>
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<tr>
<td>Cognitive Academic Language Learning Approach (CALLA)</td>
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<tr>
<td>Specially Designed Academic Instruction in English (SDAIE)</td>
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<td>Sheltered Instruction Observation Protocol (SIOP)</td>
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<tr>
<td>Guided Language Acquisition Design (GLAD)</td>
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*Note: \(*p<.05*\)*
Table 6
}

**Percentages of Responses of Special Educators and General Educators for English Language Learning Sheltered Instructional Models**

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<td>Cognitive Academic Language Learning Approach (CALLA)</td>
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<td>Mentioned/Instruction</td>
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<td>8.8</td>
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<tr>
<td>Not Mentioned</td>
<td>48.2</td>
<td>62.8</td>
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<tr>
<td>Specially Designed Academic Instruction in English (SDAIE)</td>
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<td>Mentioned/Instruction</td>
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<td>58.4</td>
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<td>Sheltered Instruction Observation Protocol (SIOP)</td>
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<tr>
<td>Mentioned/Instruction</td>
<td>27.7</td>
<td>13.1</td>
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<td>Not Mentioned</td>
<td>35.8</td>
<td>48.2</td>
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<tr>
<td>Guided Language Acquisition Design (GLAD)</td>
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<tr>
<td>Mentioned/Instruction</td>
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<td>12.4</td>
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*Note. *p*<.05*
Table 7

**Summary of Chi Square Test of Independence Statistics**

<table>
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<th>Reading Strategies</th>
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<th>Inservice</th>
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<td>(n= 274 )</td>
</tr>
<tr>
<td></td>
<td>$X^2$</td>
<td>$p$</td>
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<tr>
<td>Teaching pre-, during, and post-reading strategies</td>
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<td>Fluency building</td>
<td>16.505</td>
<td>.002*</td>
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<tr>
<td>Direct teaching vocabulary through listening, seeing, reading, and writing in short-time segments</td>
<td>7.061</td>
<td>.133</td>
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<tr>
<td>Relating reading to student experiences</td>
<td>11.244</td>
<td>.024*</td>
</tr>
<tr>
<td>Chunking and questioning aloud</td>
<td>10.523</td>
<td>.032*</td>
</tr>
<tr>
<td>Practicing paraphrasing and retelling strategies</td>
<td>16.104</td>
<td>.003*</td>
</tr>
<tr>
<td>Graphic organizers such as semantic maps, story maps, concept maps</td>
<td>12.694</td>
<td>.013*</td>
</tr>
<tr>
<td>Use of organized pre-assessment strategies</td>
<td>5.387</td>
<td>.250</td>
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<tr>
<td>Cooperative Learning</td>
<td>4.112</td>
<td>.391</td>
</tr>
<tr>
<td>Curriculum-based oral reading probe</td>
<td>14.182</td>
<td>.007*</td>
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*Note.* *p* < .05
Table 8

Percentages of Responses of Special Educators and General Educators for English Language Learning Reading Strategies

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<th>Special Educators</th>
<th>General Educators</th>
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<tbody>
<tr>
<td></td>
<td>Preservice (n=137)</td>
<td>Inservice (n=137)</td>
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<tr>
<td>Teaching pre-, during, and post-reading strategies</td>
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<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>51.1</td>
<td>28.5</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>5.8</td>
<td>21.2</td>
</tr>
<tr>
<td>Fluency building</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>48.2</td>
<td>31.4</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>4.4</td>
<td>21.9</td>
</tr>
<tr>
<td>Direct teaching vocabulary through listening, seeing, reading, and writing in short-time segments</td>
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<tr>
<td>Mentioned/Instruction</td>
<td>47.4</td>
<td>32.1</td>
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<tr>
<td>Not Mentioned</td>
<td>9.5</td>
<td>23.4</td>
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<tr>
<td>Relating reading to student experiences</td>
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<td>Mentioned/Instruction</td>
<td>48.2</td>
<td>31.4</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>5.8</td>
<td>21.9</td>
</tr>
<tr>
<td>Chunking and questioning aloud</td>
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<td>Mentioned/Instruction</td>
<td>52.6</td>
<td>30.7</td>
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<td>22.6</td>
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<tr>
<td>Practicing paraphrasing and retelling strategies</td>
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<td>Mentioned/Instruction</td>
<td>48.2</td>
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</tr>
<tr>
<td>Not Mentioned</td>
<td>3.6</td>
<td>19.7</td>
</tr>
<tr>
<td>Graphic organizers such as semantic maps, story maps, concept maps</td>
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<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
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<td>44.5</td>
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Note. *p<.05 (continued)
Table 8

Percentages of Responses of Special Educators and General Educators for English Language Learning Reading Strategies

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<th>Reading Strategies</th>
<th>Special Educators</th>
<th>General Educators</th>
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<tr>
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<td>Preservice (n=137)</td>
<td>Inservice (n=137)</td>
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<tr>
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<td>Mentioned/Instruction</td>
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</tr>
<tr>
<td>Not Mentioned</td>
<td>5.1</td>
<td>18.2</td>
</tr>
<tr>
<td>Cooperative Learning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>57.7</td>
<td>38.0</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>5.8</td>
<td>19.0</td>
</tr>
<tr>
<td>Curriculum-based oral reading probe</td>
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<td></td>
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<td>Mentioned/Instruction</td>
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<td>33.6</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>12.4</td>
<td>31.4</td>
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Note: *p<.05
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<td>$p$</td>
<td>$X^2$</td>
<td>$p$</td>
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<td>Tactile, concrete experiences in mathematics</td>
<td>24.498</td>
<td>&lt;.001*</td>
<td>17.141</td>
<td>.002*</td>
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<tr>
<td>Daily re-looping of previously learned material</td>
<td>9.099</td>
<td>.059</td>
<td>1.775</td>
<td>.777</td>
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<td>Problem solving instruction and task analysis strategies</td>
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<td>.001*</td>
<td>5.359</td>
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<td>.014*</td>
<td>1.448</td>
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<td>.002*</td>
<td>6.587</td>
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<td>.403</td>
<td>2.069</td>
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<td>2.499</td>
<td>.645</td>
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<td>Reciprocal Peer Tutoring (RPT)</td>
<td>16.418</td>
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<td>2.833</td>
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<td>23.321</td>
<td>&lt;.001*</td>
<td>3.063</td>
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<td>Explicit timing</td>
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<td>.004*</td>
<td>6.626</td>
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*Note. *$p<.05$
Table 10

Percentages of Responses of Special Educators and General Educators for English Language Learning Math Strategies

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<th>Special Educators</th>
<th>General Educators</th>
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<td>Inservice (n=137)</td>
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<tr>
<td>Tactile, concrete experiences in mathematics</td>
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<tr>
<td>Mentioned/Instruction</td>
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<td>38.0</td>
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<tr>
<td>Not Mentioned</td>
<td>6.6</td>
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<tr>
<td>Daily re-looping of previously learned material</td>
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<td>Mentioned/Instruction</td>
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<td>28.5</td>
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<td>32.8</td>
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<td>Teacher “think-alouds”</td>
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<tr>
<td>Student “think-alouds”</td>
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<td></td>
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<tr>
<td>Mentioned/Instruction</td>
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<td>30.7</td>
</tr>
<tr>
<td>Not Mentioned</td>
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<tr>
<td>Adjusted speech</td>
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<tr>
<td>Mentioned/Instruction</td>
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<tr>
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<td>48.2</td>
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<td>49.6</td>
<td>30.7</td>
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<tr>
<td>Not Mentioned</td>
<td>10.9</td>
<td>22.6</td>
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*Note: *$p<.05$ (continued)
Table 10

Percentages of Responses of Special Educators and General Educators for English Language Learning Math Strategies

<table>
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<tr>
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<th>General Educators</th>
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<tr>
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<td>Inservice (n=137)</td>
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<tr>
<td>Specific informal assessments based on curriculum</td>
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<tr>
<td>Mentioned/Instruction</td>
<td>33.6</td>
<td>19.0</td>
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<td>Not Mentioned</td>
<td>19.0</td>
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<tr>
<td>Explicit timing</td>
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<tr>
<td>Mentioned/Instruction</td>
<td>21.2</td>
<td>13.9</td>
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<tr>
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*Note.* *p* < .05
Table 11

*Summary of Chi Square Test of Independence Statistics*

<table>
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<tr>
<th>Science Strategies</th>
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<td></td>
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<td>2.122</td>
<td>.713</td>
</tr>
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<td>.103</td>
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<td>Using pictures to demonstrate steps</td>
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<td>.113</td>
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<tr>
<td>Modeling/Teacher demonstration</td>
<td>10.011</td>
<td>.040*</td>
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<tr>
<td>Using pre-reading strategies in content areas</td>
<td>14.901</td>
<td>.005*</td>
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<tr>
<td>Graphic organizers such as semantic and conceptual mapping</td>
<td>8.668</td>
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<td>Use short segments to directly teach vocabulary through listening, seeing, reading, and writing</td>
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*Note.* $p < .05$
Table 12

Percentages of Responses of Special Educators and General Educators for English Language Learning Science Strategies

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<th>General Educators</th>
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<td>Inservice (n=137)</td>
</tr>
<tr>
<td></td>
<td>Preservice (n=137)</td>
<td>Inservice (n=137)</td>
</tr>
<tr>
<td>Hands-on, active participation</td>
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<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>46.7</td>
<td>34.3</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>10.9</td>
<td>23.4</td>
</tr>
<tr>
<td>Using visuals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>54.0</td>
<td>43.8</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>10.2</td>
<td>19.0</td>
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<tr>
<td>Using pictures to demonstrate steps</td>
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<td>49.6</td>
<td>41.6</td>
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<tr>
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<td>21.2</td>
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<td>Mentioned/Instruction</td>
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<td>Not Mentioned</td>
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<td>19.0</td>
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<tr>
<td>Using pre-reading strategies in content areas</td>
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</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>53.3</td>
<td>37.2</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>10.9</td>
<td>25.5</td>
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<tr>
<td>Graphic organizers such as semantic and conceptual mapping</td>
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<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>54.0</td>
<td>40.1</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>10.9</td>
<td>20.4</td>
</tr>
</tbody>
</table>

Note. *p<.05 (continued)
Table 12

*Percentages of Responses of Special Educators and General Educators for English Language Learning Science Strategies*

<table>
<thead>
<tr>
<th>Science Strategies</th>
<th>Special Educators</th>
<th>General Educators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Preservice (n=137)</td>
<td>Inservice (n=137)</td>
</tr>
<tr>
<td></td>
<td>Preservice (n=137)</td>
<td>Inservice (n=137)</td>
</tr>
<tr>
<td>Use short segments to directly teach vocabulary through listening, seeing, reading, and writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>38.7</td>
<td>31.4</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>16.1</td>
<td>24.1</td>
</tr>
<tr>
<td>Peer tutoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>30.7</td>
<td>24.8</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>20.4</td>
<td>31.4</td>
</tr>
<tr>
<td>Using response cards during instruction as a response to teacher questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>29.2</td>
<td>19.7</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>24.1</td>
<td>40.9</td>
</tr>
<tr>
<td>Specific informal assessments based on curriculum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentioned/Instruction</td>
<td>65.1</td>
<td>26.3</td>
</tr>
<tr>
<td>Not Mentioned</td>
<td>32.9</td>
<td>33.6</td>
</tr>
</tbody>
</table>

*Note.* *p* < .05
APPENDIX B

TEACHER CONSENT FORM
The purpose of this study is to research the level and type of English Language Learning strategy instruction received by general and special education teachers in their preservice and inservice training programs.

You are being asked to participate in the study because you meet the following criteria: you are a general or special education teachers who is currently teaching.

If you volunteer to participate in this study, you will be asked to do the following: completion of an online questionnaire. If you wish to volunteer, please go to the following URL address:

UNLV-ELL.com

This study includes only minimal risks. The study will take approximately 20 minutes of your time. You will not be compensated for your time.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office of Research Integrity – Human Subjects at 702-895-2794, toll free at 877-895-2794, or via email at IRB@unlv.edu.

Your participation in this study is voluntary. You may withdraw at any time. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Participant Consent:

☐ Yes, I have read the above information and agree to participate in this study. I am at least 18 years of age. (By clicking here, you will be directed to the questionnaire.)

☐ No, I do not want to participate at this time.
INFORMED CONSENT
Department of Educational and Clinical Studies

TITLE OF STUDY: An Analysis of English Language Learning Instruction Provided In Teacher Education and Inservice Training Programs for General and Special Educators.

INVESTIGATOR(S): Lidia Sedano and Kyle Higgins

For questions or concerns about the study, you may contact Dr. Kyle Higgins at (702) 895-1102.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted, contact the UNLV Office of Research Integrity – Human Subjects at 702-895-2794, toll free at 877-895-2794 or via email at IRB@unlv.edu.

Purpose of the Study
You are invited to participate in a research study. The purpose of this study is to collect a state of the nation on the use of English Language Learning strategy instruction.

Participants
You are being asked to participate in the study because you fit this criteria: Graduate level students of at least 18 years of age who is currently licensed teacher, taking general or special education graduate level courses.

Procedures
If you volunteer to participate in this study, you will be asked to do the following: (a) will request voluntary participation to complete an on-line questionnaire, and (b) provide truthful responses to all items as listed. It is anticipated that this stud will last four weeks.

Benefits of Participation
There may/may not be direct benefits to you as a participant in this study. However, we hope to learn the level of training in English Language Learning strategies provided to special and general educators in their teacher education programs and school-based inservice training.

Risks of Participation
There are risks involved in all research studies. This study may include only minimal risks. This study involves completing a questionnaire online. Information will be disseminated through University Facilitators. The study includes only minimal risks. You
may feel uncomfortable when responding to the questionnaire items, or may feel pressured by the University Facilitator to participate.

**Cost /Compensation**
There will not be financial cost to you to participate in this study. You will participate in this study on-line. The study will take 20 minutes of your time. You will not be compensated for your time.

**Confidentiality**
All information gathered in this study will be kept completely confidential. No reference will be made in written or oral materials that could link you to this study. All records will be stored in a locked facility at UNLV for three years after completion of the study. After the storage time the information gathered will be destroyed/shredded.

**Voluntary Participation**
Your participation in this study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time without prejudice to your relations with UNLV. You are encouraged to ask questions about this study at the beginning or any time during the research study.

**Participant Consent:**
I have read the above information and agree to participate in this study. I have been able to ask questions about the research study. I am at least 18 years of age. A copy of this form has been given to me.

_________________________________________  Date

Signature of Participant

_________________________________________

Participant Name (Please Print)

_________________________________________

Signature of Participant  Date

_________________________________________

Participant Name (Please Print)
APPENDIX D

NOTIFICATION TO RECRUIT PARTICIPANTS
Notification to Recruit Research Participants

[Insert name and address of your department and university] .

Subject: Letter of Notification to Conduct Research

Dear Department Chair:

This letter will serve as notification that the University of Nevada, Las Vegas (“UNLV”) researchers, Amanda Kyle Higgins and Lidia Sedano would like to recruit participants at your facility for a research project entitled An Analysis of English Language Learning Instruction Provided in Teacher Education and Inservice Training Programs for General and Special Educators.

The researchers will provide full details of the research project to you (please see attached). If you give permission for the researcher to recruit participants for the study please sign below.

If you have any concerns or require additional information, please contact the UNLV Office of Research Integrity – Human Subjects at 895-2794 or email IRB@unlv.edu.

_______________________________________
I give permission to recruit subjects at this facility.

Facility’s Authorized Signatory

Date

________
Printed Name and Title of Authorized Signatory
APPENDIX E

September 4, 2012

Dr. Martha Thurlow, Director
National Center on Educational Outcomes
University of Minnesota
207 Pattee Hall
150 Pillsbury Dr. SE
Minneapolis, MN 55455

Dear Dr. Thurlow,

I am conducting a study at the University of Nevada, Las Vegas as the dissertation component of my doctoral study. The study is entitled “An Analysis Of English Language Learning Instruction Provided In Teacher Education and In-Service Training Programs for General and Special Educators.” I am writing to request permission to use strategy items that were identified by teachers and the research as being important to ELL students with disabilities. I have selected topical items from reading, math, and science. The top 10 items from each category were selected based on the mean reported. These items will be included in an online questionnaire that will be completed by general and special education teachers. I am asking permission to use the selected items from the following report:


The requested permission extends to any future revisions and editions of the study, including non-exclusive world rights in all languages. These rights will in no way restrict republication of the material in any other form by you or by others authorized by you. Your signing of this letter will also confirm that you hold authority of the copyright to the above-described material. The report will be cited in the dissertation as well as any publications that may result from my dissertation.

If these arrangements meet your approval, I am requesting that you please sign this letter where indicated below and return it to me as soon as possible. Thank you for your consideration.

Sincerely,

[Signature]

Lidia Sodano
Lidia.Sodano@UNLV.EDU
Phone Number (702) 321-9268 / Fax (702) 895-2569

PERMISSION GRANTED FOR THE REQUESTED ABOVE:

[Signature]

Dr. Martha Thurlow, Director

Date: 9/12/12

Department of Educational and Clinical Studies
Box 458014 • 4505 S. Maryland Parkway • Las Vegas, NV 89154-3014
Tel: 702-895-3205 • Fax: 702-895-1984
Demographic Information

(Part I)

Please complete the following information, by providing a response or placing a checkmark in the space provided. All information provided will be confidential.

Gender: Male _______ Female _______

Current Teaching Assignment:

- Resource Room
- Collaborative Consultant (CC/Co-op)
- Self-Contained Classroom
- Early Intervention
- Related Service
- General Education
- Other

Area of Concentration:

- Early Childhood
- Elementary
- Secondary
- Special Education
- Other (Please fill in)

Grades levels currently teaching:

- Early Childhood
- K-1
- 2-3
- 4-5
- 6-8
- 9-12
Please place a checkmark next to all that apply in the space provided identifying disabilities among students you instruct in your current teaching assignment:

- Autism
- Deaf-Blindness
- Developmental Delay
- Emotional Disturbance
- Hearing Impairment
- Intellectual Disabilities
- Multiple Disabilities
- Orthopedic Impairment
- Other Health Impairment
- Specific Learning Disability
- Speech or Language Impairment
- Traumatic Brain Injury
- Visual Impairment/Blindness
Demographic Information

(Part II)

Please complete the following information, by providing a response or placing a checkmark in the space provided. All information provided will be confidential.

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td></td>
</tr>
<tr>
<td>American Indian or Alaska Native</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td></td>
</tr>
<tr>
<td>Native Hawaiian or Pacific Islander</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td></td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td></td>
</tr>
<tr>
<td>Other (Please fill in)</td>
<td></td>
</tr>
</tbody>
</table>

Teacher Education (Select the Highest Degree)

<table>
<thead>
<tr>
<th>Degree</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s Degree</td>
<td></td>
</tr>
<tr>
<td>Master’s Degree</td>
<td></td>
</tr>
<tr>
<td>Educational Specialist</td>
<td></td>
</tr>
<tr>
<td>Doctorate</td>
<td></td>
</tr>
</tbody>
</table>
Teaching Experience Number of Years Teaching:

- 1-3 years
- 4-10 years
- 10- years or more

Additional Endorsements:

- TESL
- Bilingual Education
- Foreign Language
- Reading
- Administrative
- Other (Please fill in)

In your teacher education program, did you ever receive training for working with English language learners?

Yes _____

No _____

Do you speak a second language in addition to English?

No _____

I can speak 20-50 words in a second language _____

I can conduct a limited conversation in a second language _____

I am fluent in a language other than English _____

Comment Box:


This questionnaire is designed to evaluate the preparation of general and special education teachers for instructional strategies for English language learners with Disabilities.

**Categories of Language Development:** A language distinction between two different proficiencies categorized by Cummins (1999). The two types of proficiency are Basic Interpersonal Communication Skills (BICS); this is the stage where the student is able to acquire the language by listening and speaking. The second is Cognitive Academic Language Proficiency (CALP); this the stage where the student is able to perform with academic demands placed in the classroom with various academic subjects (Cummins, 1999).

<table>
<thead>
<tr>
<th>Sheltered Instruction Models:</th>
<th>an academic literacy development approach used with ELLs to access academic content (Short, Echevarria, &amp; Richards-Tutor, 2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading Strategies:</strong></td>
<td>strategies utilized to understand the text, be engaged, or build on prior knowledge (Gersten, Baker, Haager, &amp; Graves, 2005)</td>
</tr>
<tr>
<td><strong>Math Strategies:</strong></td>
<td>strategies utilized to solve math problems, reinforce skills, or assist with instruction (Shyyan, Thurlow, &amp; Liu, 2008)</td>
</tr>
<tr>
<td><strong>Science Strategies:</strong></td>
<td>strategies utilized to understand the text, be engaged, or build on prior knowledge (Shyyan, Thurlow, &amp; Liu, 2008)</td>
</tr>
<tr>
<td><strong>Direct Instruction:</strong></td>
<td>The process of explicit teaching aimed at teaching a particular skill or strategy to improve access to academic content (Peregoy, &amp; Boyle, 2013).</td>
</tr>
<tr>
<td><strong>Incidental Instruction:</strong></td>
<td>When the educator has not predetermined instructional focus, rather the instruction comes naturally with no pre-targeted instruction planning (Basturkmen, Loewen, &amp; Ellis, 2004.)</td>
</tr>
</tbody>
</table>

Please rate the level of instruction received in your teacher education program and inservice training in your school district for each of the following categories for language development, sheltered instructional models, reading, math, and science strategies for English language learners with Disabilities:

- **Circle 1 if the item was mentioned and a specific strategy was taught through direct instruction.**
- **Circle 2 if the item was mentioned and a specific strategy was discussed.**
- **Circle 3 if the item was mentioned and strategies were mentioned incidentally.**
- **Circle 4 if the item was mentioned and no specific strategy was taught.**
- **Circle 5 if the item was never mentioned and a specific strategy was never taught.**
Group 1
Categories of Language Development

<table>
<thead>
<tr>
<th>1. <strong>Basic Interpersonal Communication Skills (BICS):</strong></th>
<th>Mentioned/ Specific Strategy Taught</th>
<th>Mentioned/ Specific Strategy Discussed</th>
<th>Mentioned/ Strategies Mentioned Incidentally</th>
<th>Mentioned/ No Specific Strategy Taught</th>
<th>Not Mentioned/ No Specific Strategy Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>The language necessary for day-to-day living, this includes conversations with friends and informal interactions. The BICS usually takes about six months to two years to acquire proficiency.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Teacher Education Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inservice Training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. <strong>Cognitive Academic Language Proficiency (CALP):</strong></th>
<th>Mentioned/ Specific Strategy Taught</th>
<th>Mentioned/ Specific Strategy Discussed</th>
<th>Mentioned/ Strategies Mentioned Incidentally</th>
<th>Mentioned/ No Specific Strategy Taught</th>
<th>Not Mentioned/ No Specific Strategy Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALP involves formal academic learning. This includes listening, speaking, reading, and writing in the academic content areas. CALP usually takes about five-to-ten years to acquire proficiency.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Teacher Education Program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inservice Training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Group 2
Sheltered Instruction Models

1. **Cognitive Academic Language Learning Approach (CALLA):** The CALLA model incorporates cognitive learning theory and integrates academic content instruction with explicit teaching of learning strategies. The CALLA method consists of a five-stage cycle of instruction: preparation, presentation, practice, evaluation, and expansion.

   Teacher Education Program: 1 2 3 4 5

   Inservice Training: 1 2 3 4 5

2. **Specially Designed Academic Instruction in English (SDAIE):** The SDAIE model provides ELLs access to the curriculum while developing the English language. The SDAIE is used with ELLs who are in the intermediate-level of knowledge in English. The SDAIE method consists of five components: teacher attitude, content, connections, comprehensibility, and interaction.

   Teacher Education Program: 1 2 3 4 5

   Inservice Training: 1 2 3 4 5
Group 2
Sheltered Instruction Models

3. **Sheltered Instruction Observation Protocol (SIOP):**
   This model is used to make grade level academic content accessible to ELLs while promoting English language development. The SIOP model consists of 30 instructional strategies that are grouped into eight components: preparation, building background, comprehensible input, strategies, interaction practice/application, lesson delivery, and review/assessment.

<table>
<thead>
<tr>
<th>Teacher Education Program</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inservice Training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

4. **Guided Language Acquisition Design (GLAD):**
   The GLAD model assists teachers in providing a classroom with language-rich academic content. The GLAD model consists of five components: focus/motivation, comprehensible input, guided oral practice, reading/writing, and closure.

<table>
<thead>
<tr>
<th>Teacher Education Program</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inservice Training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
### Group 3
Reading Strategies

<table>
<thead>
<tr>
<th>Mentioned/Specific Strategy Taught</th>
<th>Mentioned/Specific Strategy Discussed</th>
<th>Mentioned/Strategies Mentioned Incidentally</th>
<th>Not Mentioned/No Specific Strategy Taught</th>
</tr>
</thead>
</table>

1. **Teaching pre-, during, and post-reading strategies:** Students are taught to use strategies for pre, during, and post-reading to increase comprehension when reading text.

   - Teacher Education Program: 1 2 3 4 5
   - Inservice Training: 1 2 3 4 5

2. **Fluency building (high frequency words):** Having students practice repeated reading by using a short passage or assessment that builds on increasing high-frequency words.

   - Teacher Education Program: 1 2 3 4 5
   - Inservice Training: 1 2 3 4 5

3. **Direct teaching vocabulary through listening, seeing, reading, and writing in short-time segments:** Students develop vocabulary through listening, speaking, reading, and writing.

   - Teacher Education Program: 1 2 3 4 5
   - Inservice Training: 1 2 3 4 5
Group 3
Reading Strategies

<table>
<thead>
<tr>
<th></th>
<th>Mentioned/Specific Strategy Taught</th>
<th>Mentioned/Specific Strategy Discussed</th>
<th>Mentioned/Specific Strategy Mentioned Incidentally</th>
<th>Mentioned/No Specific Strategy Taught</th>
<th>Not Mentioned/No Specific Strategy Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Relating reading to student experiences: Students are given reading content and asked to discuss their personal experiences related to the content.</td>
<td>Teacher Education Program</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inservice Training</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Chunking and questioning aloud (reading mastery): A story is read to the student, the teacher pauses after reading a block of text, and asks specific questions.</td>
<td>Teacher Education Program</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inservice Training</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Practicing paraphrasing and retelling strategies: Paraphrasing is when students are able to describe in their own words what they read. Retelling is being able to orally share what they read to another student.</td>
<td>Teacher Education Program</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inservice Training</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Group 3  
Reading Strategies

| 7. Graphic organizers such as semantic maps, story maps, concept maps: A strategy used to visually facilitate organization of information, problem solving, planning, or decision making. |
|---|---|---|---|---|---|
| Teacher Education Program | 1 | 2 | 3 | 4 | 5 |
| Inservice Training | 1 | 2 | 3 | 4 | 5 |

| 8. Use of organized pre-assessment strategies (e.g., KWL): Provides a baseline and targets students learning gaps that need to be addressed. |
|---|---|---|---|---|---|
| Teacher Education Program | 1 | 2 | 3 | 4 | 5 |
| Inservice Training | 1 | 2 | 3 | 4 | 5 |

| 9. Cooperative Learning: A small group of students working together to obtain a goal or an activity. |
|---|---|---|---|---|---|
| Teacher Education Program | 1 | 2 | 3 | 4 | 5 |
| Inservice Training | 1 | 2 | 3 | 4 | 5 |
### Group 3
**Reading Strategies**

<table>
<thead>
<tr>
<th></th>
<th>Mentioned/Specific Strategy Taught</th>
<th>Mentioned/Specific Strategy Discussed</th>
<th>Mentioned/Strategies Mentioned Incidentally</th>
<th>Mentioned/No-Specific Strategy Taught</th>
<th>Not Mentioned/No-Specific Strategy Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. <strong>Curriculum-based oral reading probe:</strong></td>
<td>Students are given a reading passage to read orally for one minute. Errors are recorded. Then, the examiner asks questions to check for comprehension and continues until the students reach the level of frustration. The median score determines the student’s literacy rate.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teacher Education Program</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inservice Training</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
### Group 4

**Math Strategies**

<table>
<thead>
<tr>
<th>1. <strong>Tactile, concrete experiences in mathematics</strong>: The use of manipulatives (objects, blocks, coins) to recreate math concepts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Education Program</td>
</tr>
<tr>
<td>Inservice Training</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. <strong>Daily re-looping of previously learned material</strong>: Students are made aware of the previous topics or concepts taught and how they relate to the new concept.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Education Program</td>
</tr>
<tr>
<td>Inservice Training</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. <strong>Problem solving instruction and task analysis strategies</strong>: A process of analyzing and prioritizing sequential mathematical equations or problems to solve the problem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Education Program</td>
</tr>
<tr>
<td>Inservice Training</td>
</tr>
</tbody>
</table>
### Group 4
Math Strategies

<table>
<thead>
<tr>
<th></th>
<th>Mentioned Specific Strategy Taught</th>
<th>Direct Instruction</th>
<th>Mentioned Specific Strategy Discussed</th>
<th>Mentioned Strategies Mentioned Incidentally</th>
<th>Mentioned No Specific Strategy Taught</th>
<th>Not Mentioned No Specific Strategy Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. <strong>Teacher “think-alouds”</strong>: The teacher verbalizes his/her thoughts by orally modeling the process of solving a problem before beginning to work on a specific math equation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teacher Education Program</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Inservice Training</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</tr>
<tr>
<td>5. <strong>Student “think-alouds”</strong>: The student verbalizes his/her thought process aloud on how to solve a math problem before beginning to work on a specific math equation.</td>
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<tr>
<td>6. <strong>Adjusted speech</strong>: Speech patterns are changed by the teacher to assist in increasing academic comprehension.</td>
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</table>
### Group 4
Math Strategies

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>7. <strong>Graphic organizers such as semantic mapping and concept mapping in word problems</strong>: A strategy used to visually facilitate organization of information, problem solving, planning, or decision making.</td>
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<td>Inservice Training</td>
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</tr>
<tr>
<td>8. <strong>Reciprocal Peer Tutoring (RPT) to improve mathematics achievement</strong>: Students work in pairs during math instruction with one student being the tutor. They establish team goals and monitor their own reward system.</td>
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<tr>
<td>Teacher Education Program</td>
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<tr>
<td>Inservice Training</td>
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</tr>
<tr>
<td>9. <strong>Specific informal assessments based on curriculum (Curriculum-Based Probe)</strong>: Math probes are used to monitor student progress in acquiring skills. Students are given worksheets with math problems to solve in a minute timing. Then the teacher uses the median score to determine the student’s instructional math level.</td>
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<tr>
<td>Teacher Education Program</td>
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<tr>
<td>Inservice Training</td>
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<td>4</td>
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</table>
**Group 4**
Math Strategies

<table>
<thead>
<tr>
<th>10. <strong>Explicit timing</strong>: The teacher hands out a worksheet to all of the students and they are told they will complete the worksheet in a short time frame. Students are told to stop after a given time frame and underline the last number written. The teacher restarts the stopwatch and the process is repeated three times. The teacher collects the worksheets and evaluates the rate in responding.</th>
<th>Mentioned/Specific Strategy Taught</th>
<th>Mentioned/Specific Strategy Discussed</th>
<th>Mentioned/Strategies Mentioned Incidentally</th>
<th>Mentioned/No Specific Strategy Taught</th>
<th>Not Mentioned/No Specific Strategy Taught</th>
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<tbody>
<tr>
<td>Teacher Education Program</td>
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</tr>
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</tbody>
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### Group 5
Science Strategies

<table>
<thead>
<tr>
<th>Mentioned Specific Strategy Taught/Direct Instruction</th>
<th>Mentioned Specific Strategy Discussed</th>
<th>Mentioned Specific Strategy Mentioned Incidentally</th>
<th>Mentioned Specific Strategy Taught</th>
<th>Not Mentioned No Specific Strategy Taught</th>
</tr>
</thead>
</table>

1. **Hands-on, active participation:** Students are directly involved in exploring, discussing, discovering and reflecting on difficult concepts.

   - Teacher Education Program: 1 2 3 4 5
   - Inservice Training: 1 2 3 4 5

2. **Using visuals:** Using printable illustrations or objects as resources to deepen the understanding of the content.

   - Teacher Education Program: 1 2 3 4 5
   - Inservice Training: 1 2 3 4 5

3. **Using pictures to demonstrate steps:** Students are given pictures or images on how to complete a project or experiment.

   - Teacher Education Program: 1 2 3 4 5
   - Inservice Training: 1 2 3 4 5

4. **Modeling/Teacher demonstration:** Teaching through the use of examples or experiments. Students watch and learn before conducting their own experiment.

   - Teacher Education Program: 1 2 3 4 5
   - Inservice Training: 1 2 3 4 5
## Group 5
Science Strategies

<table>
<thead>
<tr>
<th></th>
<th>Mentioned/Specific Strategy Taught</th>
<th>Direct Instruction</th>
<th>Mentioned/Specific Strategy Discussed</th>
<th>Mentioned/Strategies Mentioned Incidentally</th>
<th>Mentioned/No Specific Strategy Taught</th>
<th>Not Mentioned/No Specific Strategy Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Using pre-reading strategies in content areas: A strategy used before reading to activate prior knowledge, engage students, and focus on vocabulary words.</td>
<td></td>
<td>Teacher Education Program</td>
<td>1 2 3 4 5</td>
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<tr>
<td>6. Graphic organizers such as semantic and conceptual mapping: A strategy used to visually facilitate organization of information, problem solving, planning, or decision making.</td>
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<td></td>
<td>Inservice Training</td>
<td>1 2 3 4 5</td>
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<tr>
<td>7. Use short segments to directly teach vocabulary through listening, seeing, reading, and writing: Instruction on specific vocabulary is implemented for a brief period of time through listening, seeing, reading and writing.</td>
<td></td>
<td>Teacher Education Program</td>
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<tr>
<td></td>
<td></td>
<td>Inservice Training</td>
<td>1 2 3 4 5</td>
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</tbody>
</table>
### 8. Peer tutoring: Students work in pairs and collaborate in learning and practicing science content.

<table>
<thead>
<tr>
<th></th>
<th>Mentioned / Specific Strategy Taught</th>
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</table>

### 9. Using response cards during instruction as a response to teacher questions: Students are given a sheet of paper to write the answers to questions that the teacher may ask.

<table>
<thead>
<tr>
<th></th>
<th>Mentioned / Specific Strategy Taught</th>
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</table>

### 10. Specific informal assessments based on curriculum (Curriculum-Based Probe): Students are given a reading passage to read orally for one minute. Errors are recorded. Then, the examiner asks questions to check for comprehension and continues until the students reach the level of frustration. The median score determines the student’s literacy rate.

<table>
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</tbody>
</table>
Reliability Checklist

An Analysis of English language learning Instruction Provided In Teacher Education and Inservice Training Programs For General and Special Educators

Name: ___________________________ Date: ___________________________

Please be sure to check for the following items:

- All words are spelled correctly
- The paper format matches the on-line format
- The flow of the questionnaire
- Being able to check off more than one item (where needed)

If you have any suggestions please list them:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Comments or concerns:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
APPENDIX H

PROTOCOL DESCRIPTION
Dear <University’s Name> student:

You are being invited to participate in three research studies. The purpose of these studies is to investigate teacher preparation in the following areas: Co-teaching, English Language Learners, and Reading.

Your participation in this study is voluntary. Your input to these studies is needed to contribute to the research on teacher preparation. Participation will in no way effect your grade in this course. Additionally, no identifying information will be collected.

Participation involves the completion of three online questionnaires; each questionnaire will take you approximately 20 minutes to complete. If you wish to volunteer, please go to the following URL addresses:

http://www
http://www
http://www

Once you press enter you will be directed to the homepage of the questionnaire.

If you have any questions concerning the research study, please contact Dr. Kyle Higgins at 702-895-1102. If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact the Office of Research Integrity – Human Subjects Research, at (702) 895-0964.

Sincerely,

Kyle Higgins, Ph.D.
Principal Investigator

Wendie Castillo, M.Ed.
Catherine S. Howarter, M.A.
Lidia Sedano, M.Ed
Student Investigators
REFERENCES


151
National Center for Education Statistics (2012b). College Navigator: California State University, Fullerton.
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http://nces.ed.gov/collgenavigator/?q=Southern+Connecticut+State+University&s=all&id=130493

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http://nces.ed.gov/collgenavigator/?q=University+of+Massachusetts+Amherst&s=all&id=166629

http://nces.ed.gov/collgenavigator/?q=University+of+Nevada&s=all&id=182281

http://nces.ed.gov/collgenavigator/?q=University+of+North+Carolina&s=all&id=199148
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http://nces.ed.gov/collegenavigator/?q=Wichita+State+University&s=all&id=156
125

*Language Learning, 35*, 21-46.


http://www.qualtrics.com


Lidia Sedano  
Curriculum Vitae  
Graduate College  
University of Nevada Las Vegas  
sedanolls@yahoo.com  

**EDUCATION**  

**Ph.D., Special Education**  
Department of Educational and Clinical Studies  
University of Nevada, Las Vegas, Las Vegas, NV  
Fall-2008-  
May 2013  

**Dissertation Title:** An Analysis Of English Language Learning Instruction Provided In Teacher Education and In-Service Training Programs for General and Special Educators  

**Disability Areas:** Learning Disabilities and Gifted & Talented  
**Leadership Area:** Teaching English as a Second Language (TESL)  

**TESL Endorsement**  
Sierra Nevada College  
May 2008  

**M.Ed., Educational Leadership**  
University of Nevada, Las Vegas, NV  
May 2006  

**B.S., Special Education (Generalist K-12)**  
University of Nevada, Las Vegas, NV  
May 2002  

**Certification**  

**TESL, State of Nevada**  
2008-Present  

**Special Education, Generalist K-12**  
State of Nevada  
2006-Present  

**EDUCATIONAL WORK EXPERIENCE**  

**Graduate Assistant (Teaching)**  
University of Nevada, Las Vegas  
Las Vegas, NV  
Fall 2008-  
Present  

**Substitute Teacher**  
Clark County School District  
Las Vegas, NV  
2003-2008  

**Bilingual Special Education Teacher**  
Arturo Cambeiro Elementary School  
Las Vegas, NV  
2002-2003
### TEACHING EXPERIENCE

<table>
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<th>Course Number and Title</th>
<th>Course Description</th>
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<tr>
<td>Resource Room Practicum Supervisor</td>
<td>Supervised 20 students in the case load</td>
<td>Fall 2011</td>
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<tr>
<td>EDSP 411: Special Education Techniques in Inclusive Settings</td>
<td>Course designed to provide general education pre-service teachers an overview of special education, including legal aspects, characteristics of disabilities, accommodations for learning, and collaborative skills.</td>
<td>*Spring 2013&lt;br&gt;*Fall 2012&lt;br&gt;Spring 2012 (two sections)&lt;br&gt;Spring 2011&lt;br&gt;Spring 2010&lt;br&gt;Fall 2010&lt;br&gt;Fall 2009&lt;br&gt;*Distance Education online courses</td>
</tr>
<tr>
<td>EDSP 415: Second Language Pedagogy For Students In Inclusive Classrooms</td>
<td>Course designed to provide an introduction to introduction to English as a second language (ESL) methods, strategies, and instruction, including topics for teaching and accommodating English language learners (ELLs) with and without special needs in inclusive classrooms</td>
<td>Fall 2010&lt;br&gt;Fall 2008&lt;br&gt;Fall 2009</td>
</tr>
<tr>
<td>EDSP: 432 Parental Involvement in Special and General Education</td>
<td>Course designed to provide this course addresses the legal requirements of the Individuals with Disabilities Education Act of 2004 (IDEA 2004), and the Family Educational Rights and Privacy Act related to parent rights and responsibilities for their infants, toddlers, children, youth, adult children with disabilities in educational and community programs and settings.</td>
<td>Spring 2013</td>
</tr>
<tr>
<td>Course Number and Title</td>
<td>Course Description</td>
<td>Semester(s) Taught</td>
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<tr>
<td>EDSP 442: Curriculum Planning for English Language Learners with Diverse Needs</td>
<td>Course designed to provide the principles of curriculum organization, development, and implementation will be examined relative to English language learners (ELLs) with and without disabilities.</td>
<td>Spring 2011  Spring 2010  Spring 2009</td>
</tr>
<tr>
<td>EDSP 492: Special Education Student Teaching Seminar</td>
<td>Course designed to provide a forum for student teachers to brainstorm, problem solve, and share information related to their field experience. Instructional and behavioral strategies for regular and special education settings will be presented.</td>
<td>Fall 2012</td>
</tr>
<tr>
<td>ESP 701: Introduction to Special Education and Legal Issues</td>
<td>Course designed to provide a survey of the characteristics, training, and educational needs of students with disabilities and gifts and talents. Designed for graduate students in special education, general education, nursing, counseling, psychology, and related fields.</td>
<td>Spring 2009  Fall 2008 (two sections)</td>
</tr>
</tbody>
</table>

**PROFESSIONAL AFFILIATIONS**

**Member**, Council for Exceptional Children  
Division for Learning Disabilities  
Division for Culturally and Linguistically Diverse Exceptional Learners  
Teacher Education Division  
2008-Present

**Member**, Council for Learning Disabilities  
2012

**Member**, National Association for Bilingual Education (NABE)  
2012
PROFESSIONAL TRAINING


SCHOLARSHIP


PRESENTATIONS


Sedano, L. (2011, March). *Why teach vocabulary skills to English Language Learners.* Presentation for Spring 2011 Doctoral Poster Session Colloquium, University of Nevada, Las Vegas, NV


Sedano, L. (2010, March). *Strategies Teaching English Language Learners.* Visiting Lecture, University of Nevada Las Vegas, NV


Sedano, L. (2010, February). *Strategies Teaching English Language Learners.* Visiting Lecture, University of Nevada Las Vegas, NV


<table>
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<th>GRANT AFFILIATIONS</th>
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<td><strong>2012-present</strong></td>
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<tr>
<td>Research Assistant</td>
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<td>Highly Qualified, High Quality (HQ2) Special Educators:</td>
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<td>A 325T Project</td>
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<td>Office of Special Education Programs</td>
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<td>University of Nevada Las Vegas</td>
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<tr>
<td><strong>2012-present</strong></td>
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<tr>
<td>Formative Evaluator</td>
</tr>
<tr>
<td><em>Project Grow: Making Data-Based Decisions in the Science Content Area</em></td>
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<td>NeCoTIP Projects</td>
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<td>Nevada System of Higher Education</td>
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<td>University of Nevada Las Vegas</td>
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<td>Clark County School District</td>
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<td>January 2013</td>
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<tr>
<td>Invited Guest- Clark County School District</td>
</tr>
<tr>
<td><em>Building Language and Literacy at Home.</em></td>
</tr>
<tr>
<td>Train ELL parents on how to work with their children in providing essential educational skills</td>
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</table>
January 2013
Research Assistant/Data Collector
- Qualitative section of the dissertation study
- *First Grade Teachers’ Perceptions of the Five Strands of Effective Reading Instruction and Its Possible Influence on Daily Instructional Practices*
- By Neal Nguyen

2012-2013
Graduate and Professional Student Association (GPSA), UNLV
- Served as the graduate student representative from the Department of Educational and Clinical Studies

February 2012
UNLV Disability Resource Center Candidate Presentations
- Provided feedback on selection for Disability Specialist position

2011-2012
UNLV Student Council for Exceptional Children (CEC)
- Fundraising Chair

Fall 2011
University of Nevada, Las Vegas-Faculty Reader
- Melissa McNeely –Capstone Project
  Liberal Studies: Interdisciplinary Studies Major

April 2010
University of Nevada Las Vegas
- Selected to Speak with Northwest Accreditation Team

February 2009
Spread the Word Nevada, Kids to Kids Non-Profit Organization
- Volunteer with Parent/Child Reading program

2005-2006
Educational Leadership- Practicum Student
- (Fieldwork Experience)
  Educational Leadership
  Hale Smith Elementary School, Las Vegas, NV