

Equity for Limited English Proficient Students Regarding Assessment and
Effectiveness of Testing Accommodations: A Study of Third Graders

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A Dissertation submitted to

The Faculty of
The Graduate School of Education and Human Development
of The George Washington University
in partial fulfillment of the requirements
for the degree of Doctor of Education

January 31, 2013

Dissertation directed by

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Acknowledgments

This dissertation would not be possible without the support of my professors and family. I would like to acknowledge my chairperson and committee members, respectively. To Dr. Kelly Sherrill: Thank you for your valuable insights and guidance while assisting me through this process. Dr. Susan Swayze: Thank you for joining my committee and providing assistance through the dissertation process. I appreciate your timely feedback and positive attitude. Dr. Brandi Weiss: Thank you for your methods expertise, attention to detail, and feedback. To readers Dr. Tekleselassie and Dr. Peter Weilenmann: I appreciate your time, thoughtful feedback, and encouragement from both of you. Your assistance helped to strengthen my final product. I would also like to acknowledge Dr. Donna Wenzel for her timely editing and assistance.

My greatest appreciation goes to my family. My mother Linda's unconditional love and unwavering support helped to provide me with the strength to obtain this doctoral degree. My father Denny has instilled the value of education and the confidence to persevere under all circumstances. Mom and Dad: You have worked very hard, sacrificed time and money to lay the foundation in order for me to succeed and provide the best life for me. I am forever grateful of your love, support, and confidence in me. I would not have achieved what I have today without you.

To my son Micah: It is difficult to find the words that truly describe how much I love you. You inspire me to grow and be a better person. I have spent many hours dedicated to my work and look forward to the quality time we will spend together. It is on your behalf that I work so hard. You are the hope and future. I want you to learn that with faith, hope, love, courage, and determination, anything is possible. Finally, I would like to

thank my husband and best friend, Bernard: If it was not for your patience, support, love, and understanding, none of this would have been possible. I love you and thank you. I look forward to spending quality time with you and little Micah as a family.

Abstract of Dissertation

Equity for Limited English Proficient Students Regarding Assessment and Effectiveness of Testing Accommodations: A Study of Third Graders

This study focused on the aspect of the No Child Left Behind Act (NCLB) and the Virginia Department of Education (VDOE) that require the inclusion of all limited English proficient (LEP) students in testing situations, simultaneously making an effort to close the achievement gap. NCLB indicates that each state is to assess students in a language and form that facilitates an accurate understanding of what LEP students know and can do. Using a representative sample of third grade students from a linguistically diverse school district in Virginia, this study was conducted to see if modified-English translation accommodations assist LEP students to demonstrate their mathematics content knowledge, concurrently eliminating language barriers. In Virginia, mandatory state assessments are administered in English and LEP students often encounter testing difficulties due to a lack of English proficiency. Low scores on these assessments result in LEP students being placed in inappropriate academic tracks, being retained an additional school year, and being offered limited academic opportunities, all resulting in a lack of confidence. In some cases, LEP students are unable to graduate.

This study aimed to use an experimental mixed design to determine whether third grade LEP students perform better on mathematics assessments that are linguistically modified and translated into Spanish. The findings of this study suggested modified-English, translation accommodations improve LEP 1 & 2 students mathematics content knowledge. The modified-English, translation accommodation did not significantly improve LEP 3 & 4 student mathematics test scores. This indicated as a student's English

proficiency improves, the modified-English, translation accommodation is not necessary. This study was intended to provide policy makers insight into whether modified-English translation would be considered a viable accommodation for the LEP population.

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Chapter 1

Overview

The equity of education for Limited English Proficient (LEP) students is of great concern to American educators and policymakers. LEP is the term that is used currently in the United States to describe language minority students receiving language support services in school while they acquire English. Since 1965, there has been an increase in immigration to the United States. Schmid (2001) mentioned about one in every five individuals under the age of 18 is either an immigrant or has parents who are immigrants. Just as the school-aged LEP population throughout the United States has experienced significant growth, so has the school-aged LEP population in Virginia. Since 1992, the number of LEP students in Virginia public schools has more than tripled, resulting in students residing in the state that speak more than 118 different languages and representing more than 72 countries (Virginia Department Of Education, 2004). Concern for LEP students continues to grow as the number of LEP students entering American schools increases while remaining the lowest achieving population in both reading and mathematics (Reardon & Galindo, 2009).

School divisions in Virginia have responded to the federal requirements under the reauthorization of the Public Law 107-110, the No Child Left Behind Act of 2001 (NCLB) by including LEP students in testing situations and making an effort to close the achievement gap. Menken (2009) declared high-stakes testing is the central focus for NCLB because the tests are used to hold each school, district, and state accountable for student performance, allowing the federal government to be in control of the U.S. education system. NCLB mandates a 95% participation rate and calls for all students in

U.S. schools to achieve a level of proficient on state assessments. NCLB also requires that all LEP students become proficient in English while reaching high academic achievement standards in reading/language arts and mathematics. Furthermore, NCLB requires that LEP students participate in annual academic assessments in reading/language arts and mathematics [Public Law 107-110, Sec. 1111(b)(3)(A)]. A consequence of NCLB is that students excluded from testing previously because of a physical or psychological disability or because of limited proficiency in English are now to be included. One of the major contributing factors to this perceived underperformance is the linguistic complexity of the assessments (Abedi, Hofstetter, & Lord, 1998, 2004; LaCelle-Peterson & Rivera, 1994; Menken, 2008; Robinson, 2010; Solano-Flores, 2008; Wright & Li, 2007). Because LEP students by definition have not acquired English proficiency, assessments administered in English may not provide a true indication of LEP test performance by making the content difficult and the results invalid (Menken, 2008; Robinson 2010). The linguistic complexity of the assessment can affect the student's test performance in content areas such as language arts, mathematics, and science (Robinson, 2010).

Menken (2008) suggested that a test given in English to LEP students is not a valid measure of academic content knowledge. The inclusion of LEP students on standardized assessments that are intended for native English speakers has raised issues under NCLB. The tests that are administered are being used for purposes beyond what the creators of the tests had intended. One means of achieving inclusion of LEP students is using assessment accommodations. Butler, Stevens, and Castellon (2007) define assessment accommodations for LEP students on large-scale content assessments as the

support provided for students during a test, either through modification of the test itself or through modification of the testing procedure, to help students access the content in English and better demonstrate what they know. Empirical evidence in this research study included translation of test items (Abedi, Lord, & Hofstetter, 1998; Anderson, Jenkins, & Miller, 1996; Hofstetter, 2003; Miller, Okum, Sinai & Miller, 1999; Robinson 2010) and testing LEP students with a modified-English assessment (Abedi & Lord, 2001; Abedi et al., 1998; Abedi, Lord, Hofstetter, & Baker, 2000; Brown, 1999; Lotherington-Woloszyn, 1993; Rivera & Stanfield, 2004). The current study determined the effectiveness of translating a mathematics assessment that is modified linguistically from English to Spanish, the students' native language, which is an understudied accommodation (Abedi et al., 1998; Hofstetter, 2003; Robinson 2010). Research on the effectiveness of translating mathematics is lacking, with only two studies found. One experiment was conducted on eighth grade students in Southern California, and it suggested the language of the assessment should match the language of instruction (Abedi et al., 1998; Hofstetter, 2003). In the second experiment, conducted with a nationally representative sample of kindergarten and first grade students, Spanish-speaking LEP students performed significantly better on mathematics assessments when tested in Spanish rather than English (Robinson, 2010). It was examined in the current study whether a translated, modified-English mathematics assessment can improve test scores for a representative sample of third grade Spanish-speaking LEP students in linguistically diverse suburban school district in VA.

Statement of Problem

Assessments in English are constructed for English proficient students who are instructed in English. The achievement gap between LEP students and English proficient students is larger on tests that are considered complex linguistically. The linguistic complexity of the assessment does not necessarily measure the student's understanding of the content of the assessment. This may increase measurement error, affecting the validity and reliability of the assessment administered in English (Abedi, 2004).

NCLB established federal education policy for the United States with a focus on accountability and high-stakes testing. There is a mandate for LEP students to complete high-stakes testing and most states implemented the NCLB requirement to measure academic achievement by administering the same standardized tests as those being administered to native English speakers (Menken, 2008). With NCLB's initiative to assess students in a "language and form" (Sec. 1111(b)(3)(C)(ix)(III)) that facilitates an accurate understanding of what LEP students know and can do, LEP students are provided with assessment accommodations intended to distinguish between the student's language proficiency and content knowledge. The accommodations provided by some of the states are extended time, test translations, and the use of bilingual dictionaries (Menken, 2008). There is variance at the state level when determining the appropriate accommodations, if any, that are allowed (Rivera & Collum, 2006).

With the federal mandate in place, the inclusion of LEP students on large-scale assessments is a critical issue nationwide. Many questions remain on how to achieve this goal effectively. Several states have implemented accommodation and modification strategies to assist the LEP students in testing situations. However, there is still little

known about the appropriate accommodations and modifications or the validity of the assessments when accommodations and modifications are used.

It is of utmost importance for educators and policymakers to take into consideration the educational planning and equity for LEP students in large-scale assessment programs. Current federal policy and legislation emphasizes standards-based assessment and accountability. The federal policy of NCLB lacks specific guidance and does not address specific accommodations required by LEP students. With the student population growing more diverse, including minority groups with minimal or no English language capability, policy makers, administrators, and educators need to reevaluate the way instruction and assessment are conducted with LEP students. This research investigated the performance of LEP students on a mathematics assessment that was developed based on the Virginia Standards of Learning (SOL). The investigation included performance of students with and without the accommodations of modified-English and translation on a mathematics assessment to help determine whether modified-English and translation can be used as effective tools to support inclusion of LEP students. Although there is evidence for the effectiveness of translating a mathematics assessment from English into a student's native language (Abedi et al., 1998; Anderson, Jenkins, & Miller, 1996; Hofstetter, 2003; Miller, Okum, Sinai & Miller, 1999; Robinson 2010), the accommodation of translation is greatly understudied (Hofstetter, 2003; Rivera, Collum, Willner, & Sia, 2006).

Purpose

This study extended the research of Abedi et al. (1998) and Robinson (2010) by examining the impact of testing accommodations, specifically modified-English and

translated version of the 2001 SOL assessment created by the linguistically diverse school district mathematics department for third grade LEP students based on the Virginia SOL. This study examined the extent to which student test scores differ on a standard released 2001 mathematics assessment from the Virginia Department of Education and a modified-English, translated version of the mathematics assessment that aligns the mathematics content to the standard version of the assessment.

Inaccurate reporting of the mathematical skills for LEP students based on assessment scores has serious consequences for individual LEP students and their schools (Robinson, 2010). The results of such assessments are used in student promotion to the next grade level and tracking decisions (Robinson, 2010; Solorzano, 2007), which means that these students may repeat content and be placed in a lower track, where there is slower-paced instruction (Oakes, 2005). Furthermore, inaccurate reporting of scores for LEP students previously resulted in sanctions for an entire school (Abedi, 2004) and now could result in schools being labeled as focus or priority schools (Virginia Department of Education, 2012) because of the continued increases in school-level accountability under NCLB.

LEP students need accommodations (Rivera et al., 2006) that provide linguistic support intended to address the source of construct-irrelevant bias for LEP students; a mathematics assessment that is translated into the student's native language is an example of such accommodation.

Research Questions

This study was designed to answer the following questions concerning modified-English, translation accommodations provided to LEP students as measured by student achievement:

1. Are there differences in math achievement test scores among third grade LEP students based on a standard mathematics assessment and a modified-English, translated mathematics assessment?

It was hypothesized that math achievement test scores among third grade LEP students would be greater on a modified-English, translated mathematics assessment than on a standard mathematics assessment.

2. Are there differences in math achievement test scores among students based on four levels of language proficiency?

It was hypothesized that there would be differences in math achievement test scores among third grade LEP students based on four levels of language proficiency. LEP 3 & 4 students would score higher than LEP 1 & 2 students on both assessments. LEP 1 & 2 students would score greater gains than LEP 3 & 4 students when given the modified-English, translation accommodation as opposed to the standard mathematics assessment with no accommodations.

Statement of Potential Significance

This study has significance for many reasons. As discussed, the topic of English language proficiency assessment is controversial because of the lack of research, differences of opinion on who should be involved in assessment, what should be

assessed, what accommodations should be provided, and whether the results of the assessment are valid and reliable. The study addressed the question of whether the language acquisition theories that emphasize the complexity of language and the accommodations given to those students during assessment is reflected in the outcome of the third grade mathematics assessment based on the Virginia SOL.

Assessment has become a challenging and critical topic in all of education. Assessment of LEP students is particularly crucial because, as these students increase in numbers, greater attention is being given to their educational needs and assessment, which are integral parts of a successful educational program. “Understanding the issues concerning instruction and assessment of ELLs is of the utmost importance given the fact that ELL students are the fastest growing student population in the United States” (Abedi, 2007, p. 3).

The determination of accommodations becomes significant for the LEP population for several reasons. The limitation of fiscal resources is also an issue that can cause state assessment programs to lack quality and depth (Toch, 2005). State and district systems are vulnerable to the same issues that relate to the academic achievement assessment programs. These issues include the lack of capable assessment personnel at the state and district levels; politics; and power struggles impacting key decisions for adjustments in requirements that create systems that are more dependent on convoluted formulas than assessment of real children (Johnston & Costello, 2005; Toch, 2005).

The lack of research and information on accommodations and assessments that prove to be valid and reliable is also a significant issue. This research addressed questions that are being debated by policy makers, government officials, and educators. The

findings of this research study provide meaningful data on a.) the performance of LEP students with differing degrees of language proficiency on a mathematics assessment based on the Virginia SOL and b.) the effectiveness of testing accommodations, specifically modified-English, translation of test items for LEP students. It is the intent that knowledge gained through this study will assist states, counties, and school districts in making more informed decisions with regard to curriculum, instruction, and assessments for LEP students. It also aims to assist states, counties, and districts in making more informed decisions with regard to testing accommodation policies.

Theoretical Framework

This study was based on two related theories of accurately determining LEP student content knowledge by providing LEP students with accommodations: translation (Robinson, 2010) and modified-English (Abedi et al., 1998). The two overlapping theories of Robinson and Abedi et al. affected how the current study was conducted by providing both the translation and the modified-English accommodation in order to determine accurately LEP student content knowledge. In order to understand student assessment with a focus on language minority students, it is important to understand the content that is being assessed. The assessment tool should provide accurate information on student learning, progress, and achievement. When assessing LEP student understanding of content, LEP student language acquisition should be taken into consideration to ensure valid and reliable test results. The development of English language proficiency assessments required by NCLB is challenging because of the difficulties assessing language. One means of achieving inclusion of LEP students is through the use of assessment accommodations.

Equity for Limited English Proficient Students

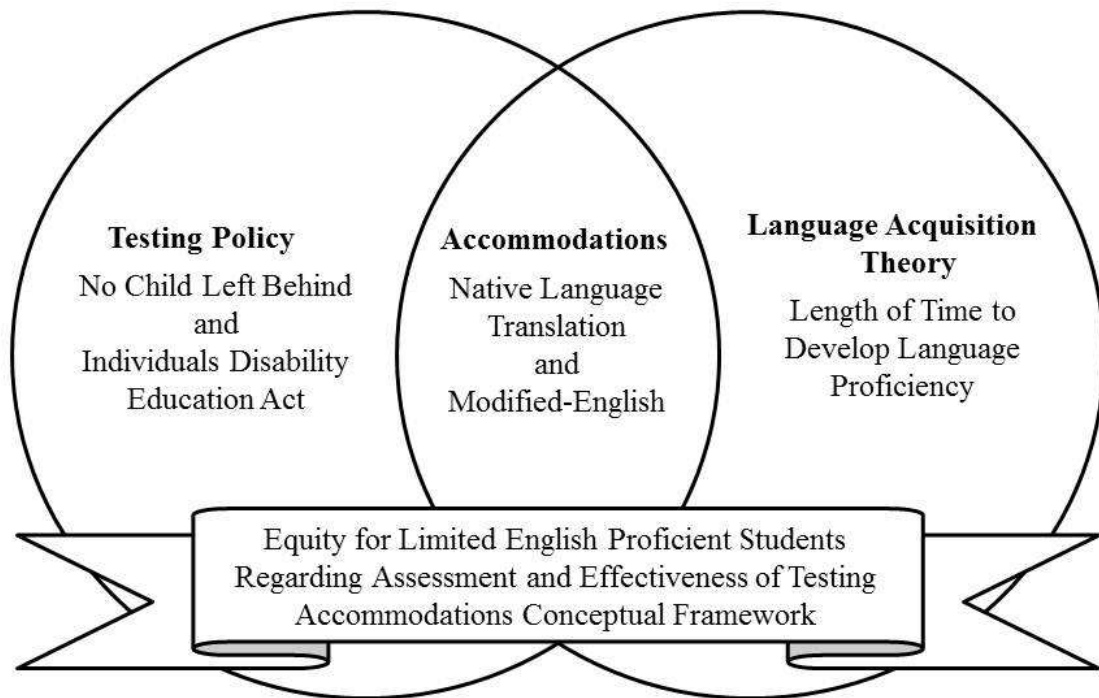


Figure 1. Conceptual Framework

This study was anchored in a three-part conceptual framework: 1.) the theoretical framework consisted of two overlapping theories that affected how the current study was shaped to determine accurately LEP student content knowledge by providing translation accommodations (Abedi et al., 1998; Anderson, Jenkins, & Miller, 1996; Hofstetter, 2003; Miller, Okum, Sinai & Miller, 1999; Robinson 2010) and modified-English (Abedi & Lord, 2001; Abedi, Lord, & Hofstetter, 1998; Abedi, Lord, Hofstetter, & Baker, 2000; Brown, 1999; Lotherington-Woloszyn, 1993; Rivera & Stanfield, 2004); 2.) language acquisition theory and the sequential order of learning language and content (Cummins, 1980, 2001; Krashen, 1982); and 3.) national policies of NCLB and IDEA and the ways

in which they impact language policy and assessment for LEP and special education students (Menken, 2009).

LEP learning and language acquisition theory.

The second element of the conceptual framework – language acquisition theory – is rooted in the degree of language proficiency that a student has obtained and its effect on the student’s academic achievement. According to NCLB, all students are required to participate in state math assessments regardless of whether the student has become fully proficient in English. Researchers have addressed the continuum of language proficiency and the amount of time it takes to reach proficiency in a second language.

Researchers continue to struggle with a valid definition of English language proficiency that includes language learning theory and the needs of individuals, while educators are making decisions on a daily basis on whether students have attained English proficiency or not. There are many different standards in states and classrooms that determine when a student is considered English proficient. The second language acquisition theory according to Cummins and Krashen, that LEP students need five to seven years to comprehend grade-level content, may be taken into consideration when instructing LEP students and developing assessments of LEP students’ content knowledge.

Assessment and accommodation policy.

With NCLB, assessment has become a necessary part of school for all school-aged children. Most states have implemented NCLB requirements to measure academic achievement by administering the same standardized assessment to LEP students and native English speakers. An assessment administered in English to LEP students is not a

valid measure of academic content knowledge. NCLB and IDEA are federal education policies that require states to assess students in a language and form that is most likely to yield accurate assessment results in specific content areas.

In summary, this three-part conceptual framework acknowledges: a.) the difficulty of determining the correct testing accommodation for LEP students; b.) the theories of second language acquisition and the amount of time it takes to learn content knowledge; and c.) NCLB, IDEA, and the impact on language policy. Consequently, this study examined if there was a difference between student test scores when given testing accommodations, specifically translation and modified-English for third grade LEP students to determine if in fact language may be a variable in determining student achievement.

Summary of the Methodology

To determine which accommodations are suitable for the diverse needs of LEP students with regard to standardized assessments, this study investigated LEP student achievement based on two strands of Virginia SOL mathematics assessments. The Virginia SOL assessments are the state standardized assessments that report academic achievement. The first assessment was administered with no accommodations and a second modified-English, translated mathematics assessment developed by the school districts mathematics department was administered. Differences in test scores demonstrated to what degree, the modified-English, translated version of the assessment is a predictor of achievement on the standardized assessments. A mixed design statistical technique was utilized to determine differences between mathematics test scores among third grade LEP students based on a standard mathematics assessment and a modified-

English, translated mathematics assessment and four levels of language proficiency. The mixed design determined if there were two main effects and an interaction between variables through one analysis.

Delimitations

This study included delimitations. Roberts (2004) defined delimitations as factors that establish the boundaries of the study and are in the control of the researcher. The delimitations of this study are minimal and include 82 Spanish-speaking third grade elementary students from a linguistically diverse school district, which include LEP students at levels 1, 2, 3, and 4 of language proficiency. This study was delimited to three elementary schools within the suburban school district. The schools were chosen based on having a large population of LEP students. The elementary schools that participated in the study administered a mathematics assessment based on the Virginia SOL with the following accommodations: a.) standard mathematics exam with no accommodations for all students; b.) modified-English, translation for all students. Elementary schools within the school district may or may not have a high LEP population and within the LEP population, this study is delimited to only the Spanish-speaking LEP students. Finally, this study was delimited to the timeframe ranging from May 2011 to July 2012.

Limitations

This study was limited by the extent to which the LEP students understood the content in the 2001 released mathematics assessments within the two strands of Computation and Estimation and Number and Number Sense. The third grade LEP students were administered the assessments at the end of the 2010-2011 school year; therefore, it was assumed that the students were familiar with the math content and that

this was not a limitation. However, the number of third grade Spanish-speaking LEP students in the sample was a limitation. The study was also limited in that the LEP student responses in the suburban school district may have differed from LEP student responses in the rest of the United States.

While this study examined the dependent variable of student achievement based on the language of the assessment, the use of translation has been used only twice in the past in relation to student achievement (Abedi et al., 1998; Robinson, 2010). As with those two studies, the present study included a same-source bias because the mathematics assessments measured both the mathematics content knowledge as well as the language of the assessment.

Additionally, achievement of LEP students on standardized mathematics assessment may or may not be a result of the language of the test. Studies have indicated that, as the language demands of individual test items decrease, the performance gap between the LEP students and the English proficient student also decreases (Abedi et al., 2004). Other studies have indicated that assessments of LEP students in their native language do not always result in valid inferences concerning their academic achievement (Abedi et al., 1998). Other factors that may influence LEP student achievement on assessments, such as additional accommodations, socio-economic status, quality of teachers, and disabilities, were not considered in this study.

Summary

The purpose of this study was to examine the impact of testing accommodations, specifically a modified-English, translated version of the 2001 SOL assessment that was created by the school district's mathematics department, for third grade LEP students

based on the Virginia SOL. This study examined (a) the extent to which student test scores differ on a standard released 2001 mathematics assessment from the Virginia Department of Education and a linguistically modified-English, translated version of the assessment that aligns the mathematics content to the standard version of the assessment and (b) the extent to which test scores differ among third grade LEP students based on four levels of language proficiency. This study examined a modified-English, translated assessment to determine if these accommodations were effective for elementary students.

This study was based on a three-part conceptual framework: 1.) the theoretical framework, I used the two overlapping theories that accurately determine LEP student content knowledge by providing translation (Robinson, 2010) and modified-English (Abedi et al., 1998) accommodations; 2.) language acquisition theory and the sequential order of learning language and content (Cummins, 2001; Krashen, 1982); and the national policies of NCLB and IDEA and the ways in which those policies impact language policy and assessment for LEP and special education students (Menken, 2009). This study is of great importance because section 1111(3)(C)(v) of the NCLB Act of 2001 requires that LEP students participate in state content assessments. NCLB also states in Section 1111(3)(C)(v)(ix)(III) that LEP students “shall be assessed in a valid and reliable manner and provided reasonable accommodations on assessments” to yield accurate data on what such students know and can do in academic content areas until such students have achieved English language proficiency. Therefore, all LEP students must participate in the Virginia assessment program. In chapter 2, a review of current literature on the relevant topics of NCLB, IDEA and the way that they impacts language

policy, language acquisition for LEP students, and accommodations given to the LEP students and students with disabilities on assessments will be provided.

Chapter 2

The No Child Left Behind Act of 2001 (NCLB) intends to close the reading and math achievement gap. Parkinson (2009) highlighted how NCLB has become an important political component of public education and how standardized test scores measure the value and effectiveness of education. The political economy shapes our schools, curriculum, and instruction, and leaves little room for differentiation among school systems. NCLB has developed a political economy based on individual needs and background differentiation through standardization and skill-based learning. As NCLB has gained influence over public education, standardized testing and test scores have become of utmost importance.

Studies exploring accommodations, specifically modified-English and translation into the LEP student's native language, are relatively few in number. Conducting such studies is important for multiple reasons. First, the LEP student population continues to grow across the United States (Peregoy & Boyle, 2008; Schmid, 2001). Second, all LEP students are required to be tested and each state is given discretion as to which accommodations, if any, are permitted. Third, although literature suggests that test accommodations may assist LEP students (Abedi et al., 2004) and that administering assessments in the student's native language assists the LEP student (Robinson, 2010), no study examines student performance on a modified-English assessment that is translated into the student's native language.

This literature review explores LEP student learning, assessment policy for LEP students, and assessment accommodations provided to both LEP students and students with disabilities. This chapter will discuss ways in which linguistic modification (Abedi,

Hofstetter, & Lord, 1998) and test translation in the students' native language (Robinson, 2010) influence the performance of students with varying levels of English language proficiency. The chapter will also provide an overview of LEP student learning and theories of second language acquisition (Chomsky, 1986; Cummins, 2001; Krashen, 1985). Federal and state testing policies and issues related to the assessment of LEP students and students with disabilities will be examined. The chapter will discuss several test accommodations, including: modified-English, translation, oral administration, allowing extra time, and providing dictionaries. The chapter will establish the need to further investigate the impact of various test accommodations of LEP students as a means to understand their academic achievement in math.

This literature search included sources from 1965 to 2012 in which LEP students, assessment, and accommodations were identified as key terms. English language learners (ELLs), student achievement, native language translation, and linguistic modifications were other search terms utilized. The Academic Search Premier, Education Research Information Clearinghouse (ERIC), JSTOR, and ProQuest electronic databases were reviewed. Books from the fields of assessment, education, policy, and second language acquisition also were used. The literature included in this chapter was gathered and reviewed from January 2009 through April 2012.

Theoretical Framework

In order to understand student assessment with a focus on language minority students, it is important first to understand the content that is being assessed. An assessment tool or system, whether it is standardized, norm-referenced, criterion-referenced, alternative, summative, or formative should provide accurate information on

student learning, progress, and achievement. Content standardized assessments administered to the LEP population are meant to measure each student's understanding of the content. However, when assessing an LEP student's understanding of the content, language acquisition should be taken into consideration to ensure valid and reliable test results.

The development of English language proficiency assessments required by NCLB is challenging because of the difficulties assessing language. Gottlieb (2006) suggested that the assessment of LEP students is more complex than the assessment of English proficient students because the assessment of LEP students involves measurement of both language proficiency and academic achievement.

Butler et al. (2007) define assessment accommodations for LEP students on large-scale content assessments as the support provided for students during a test, either through modification of the test itself or through modification of the testing procedure, to help students access the content in English and better demonstrate what they know. Empirical evidence in the current study will include testing students in their native language, (Abedi et al., 1998; Robinson, 2010) and testing LEP students with a modified-English assessment (Abedi & Lord, 2001; Abedi et al., 1998; Abedi et al., 2000).

Native Language Translation

LEP students must be able to process the language of assessments and differentiate cultural meanings within the assessment. For the LEP population, the assessment becomes a test of language proficiency to a degree. The Standards for Educational and Psychological Testing indicates that a test that employs language is, at least in part, a measure of language skills American Educational Research Association

(AERA), American Psychological Association (APA), and National Council on Measurement in Education (NCME), (1999). Therefore, some assessments may not be an accurate reflection of the student's content knowledge.

NCLB provides guidance for the LEP population in Section 1111(3) (C) that requires states to test limited English proficient students with “assessments in the language and form most likely to yield accurate data on what such students know and can do in academic content areas, until such students have achieved English language proficiency.” The use of assessments in the LEP student's native language (other than English) is allowed for a timeframe of three years; however, NCLB allows schools to extend the time for an additional two years if the student's lack of English proficiency would result in invalid and unreliable assessment results (US Congress, No Child Left Behind Act, 2001). Therefore, if a student's English language proficiency is limited and creates a barrier in assessing his or her content knowledge, then the assessment should be given in the student's native language.

Anderson, Jenkins, and Miller (1996) analyzed data from the National Assessment of Education Progress (NAEP) special study. Students were instructed to respond to mathematics items in their preferred language, Spanish or English. The results suggested that translated versions of items may not have been parallel to the original English versions in measurement properties. A large percentage of Spanish items were found to have poor item statistics, dissimilar to those for the English versions. English learners responded to two-thirds of Spanish items in different ways. In addition, as many as 10% of English learners answered some items in English and some in Spanish, rather than all items in one language only, as instructed.

The translated version of the assessment, which may not have been parallel or aligned to the original English version of the assessment (Anderson et al., 1996), would result in invalid test scores. Furthermore, the students did not respond to the test items in only one language as instructed, which also would lead to misleading assessment results. Future studies need to be certain that test items in English are aligned to the content of the test items in the translated version of the assessment.

Abedi et al. (1998) conducted an experimental study of 1,394 eighth grade students in Southern California to determine mathematics performance with accommodations. The researchers provided three different mathematics booklets. The mathematics booklets included the standard English version of the assessment, the Spanish translation, and the modified-English version of the assessment. The test booklets were assigned randomly to students within their mathematics classrooms. The researchers found that Hispanic English learners who received English language instruction scored higher on the mathematics assessment in English than their peers who were administered the same test in Spanish. Students who received mathematics instruction in Spanish performed significantly higher on the assessment with items translated to Spanish than students with the same items in English, either modified or original.

Abedi et al. (1998) used random sampling, which yielded an unbiased sample. The unbiased sample, coupled with the large sample size, led to the sound generalization that the language of instruction should be the language of the assessment. The current study will use a comprehensive sample of participants from three elementary schools

within a linguistically diverse school district in an effort to make sound generalizations of the assessment data collected.

Hofstetter (2003) replicated the study of Abedi et al. (1998) by examining the performance of 849 students on mathematics test items derived from NAEP. Eighth grade LEP and non-LEP students were included, predominantly of Hispanic descent. Students were assigned randomly a modified-English assessment, an original Spanish translation, or no accommodation with original English. Hofstetter (2003) found LEP and non-LEP students who received mathematics instruction in English and received the modified-English accommodation had slightly higher test scores than peers with no accommodation. Students who received the original Spanish accommodation tended to perform lower than students who received no accommodation. For students instructed in English, the original Spanish accommodation had a negative, but not significant, influence on their NAEP mathematics test scores. LEP students with the original Spanish accommodation scored about the same on the NAEP mathematics test as LEP students with no accommodation. When the language of instruction was Spanish, the original Spanish accommodation aided LEP students but not non-LEP students.

Similar to Abedi et al. (1998), Hofstetter (2003) used random sampling, which yielded an unbiased sample. The unbiased sample, coupled with the large sample size in both studies, led to the generalization that the original Spanish accommodation assisted LEP students when the language of instruction was Spanish. I plan to provide an assessment that allows the student to read the assessment in English as well as view the Spanish translation. This assessment strategy will be implemented in an effort to

eliminate the linguistic barrier and allow the LEP students to show the mathematics content that they have mastered.

Translation of test instructions, rather than test items, has also been used as a form of a test accommodation. Miller et al. (1999) conducted a study of LEP accommodations for 601 eleventh grade students in 17 districts within 10 counties in New Jersey. The accommodations included translation of instructions, extra time, a bilingual dictionary, and both extra time and dictionary. All LEP students obtained scores below the minimum score of 100 for proficiency in reading, math, and writing. Students that received translated instructions scored the lowest mean scores for reading and writing. However, under the same conditions students received the highest mean scores for the math component. All LEP students scored below the minimum score of 100 for proficiency in all subject areas. This finding indicates that the accommodation of translation of instructions did not assist LEP students within each of the content areas, but does not provide conclusive results.

Research findings suggest that testing LEP students in their native language will not in all cases yield more valid inferences about student academic achievement in content areas. The findings suggest that assessments in a language other than English should be administered to students who receive instruction in that language or are familiar with the content terminology in that language (Abedi et al., 1998; Hofstetter, 2003).

More recently, Robinson (2010) used the assessment design of the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K), a longitudinal data set collected by the United States Department of Education. The ECLS-

K included 21,399 students, a sample that is nationally representative of the United States Kindergarten population during the 1998-1999 school year. The ECLS-K mathematics assessments were created by the Educational Testing Service (ETS) based on commercially used assessments such as the Test of Early Mathematics Ability, the Woodcock Johnson III, and the Peabody Individual Achievement Test. ETS used a rigorous approach in item translation and validation. This process involved translating the original English version items into Spanish, then back-translating them into English, a review of items by developmental and Spanish language experts, comparisons of actual versus predicted item performance, and item-response theory fit statistics. These methods revealed no consistent evidence of item-level effects (i.e., it is unlikely that any effects observed are caused by poor item translation) and thus, the two versions of the assessment functioned in a similar manner. Robinson found that Spanish-speaking students performed significantly better on mathematics assessments when tested in Spanish rather than in English in both kindergarten and first grade.

Robinson's (2010) data set allows researchers to generalize the findings that translation of test items in a student's native language will allow the student to perform better on assessments. Furthermore, the high-quality test translation process provides validity to the findings that a test administered in a student's native language results in students demonstrating their mathematical skills. I have used a similar technique that assures high-quality test translation. The mathematics assessment was written in English and includes Spanish translation. The modified version of the assessment was translated by a Bilingual Family Resource Assistant in Arlington County and reviewed by several second language specialists who speak Spanish. With the empirical evidence provided by

Robinson (2010), the current study is viewed through the lens that the quality of translation will allow Spanish-speaking LEP students to perform significantly better on a mathematics assessment when assessed in Spanish instead of English.

Abedi et al. (1998) and Hofstetter (2003) found that Hispanic English learners who received English language instruction scored higher on the mathematics assessment in English than their peers who were administered the same test in Spanish. Robinson (2010) also explored language of instruction and found, with his younger population, no evidence that the language of instruction moderated the effect of the translation in the spring of kindergarten and first grade. Regardless of whether the students received instruction in Spanish or English, the effect of being assessed in English was negative. With the conflicting evidence that the language of instruction plays any role in student achievement, language of instruction was not included as a variable and views this topic as viable for future studies.

The impact of testing accommodations was examined, specifically, a modified-English test that is translated and read aloud to a representative group of third grade LEP students within a suburban school district both in English and Spanish in an effort to see if test scores are improved. Third grade students are the youngest student population involved in the mandatory Virginia SOL assessment. This LEP population could potentially suffer due to low test scores early in their academic path. This study was intended to demonstrate that using a high-quality test translation in a student's native language will result in young LEP students performing significantly better on a mathematics assessment when assessed in Spanish instead of English.

Modified-English

A student cannot demonstrate content knowledge he or she has mastered in areas such as mathematics, science, or history if he or she is unable to interpret the vocabulary and linguistic structure of the test. Studies have compared student scores on the NAEP test items with parallel-modified items in which the mathematics task and mathematics vocabulary are presented on the assessment but the language has been modified (Abedi et al., 1998; Abedi & Lord, 2001;). The accommodation of modified English involves the rewording of test items to minimize construct-irrelevant linguistic complexity (Abedi et al., 2004).

Abedi et al. (1998) examined the impact of language modification on the mathematics performance of LEP students and English proficient students. The researchers used mathematics items from a 1996 NAEP eighth grade bilingual mathematics book in order to construct three separate test booklets: original English, modified English, and original Spanish. The test booklets were assigned randomly to a sample of 1,394 eighth grade students in schools with high enrollments of Spanish speakers. The study resulted in improved performance of 49% on items that were modified linguistically for the students.

With this empirical evidence provided by Abedi et al. (1998), this study was intended to show that LEP students will perform significantly better on a mathematics assessment when given the modified-English accommodation.

In a different study, Abedi and Lord (2001) examined the effects of language modification of test items with 1,031 eighth graders in southern California. The NAEP mathematics items were modified in an effort to reduce complex sentence structures and

to replace unfamiliar vocabulary with words that may be more familiar to the students. Mathematical vocabulary was not altered. The researchers assigned the English version as well as the modified version of the assessment to the students randomly. The results highlighted small, but significant differences in students placed in the low to average level mathematics classes. Among the linguistic modifications that contributed to the significant differences were passive voice verbs and low-frequency vocabulary. The LEP students and the low-performing students benefited the most from language modification of the test items.

A Virginia state assessment was used that assesses all third grade students and a modified-English version that has been aligned to the same content standards by the Arlington County mathematics department.

Abedi et al. (2000) examined the impact of four test accommodations provided to a sample of 946 eighth grade students and compared the results to students with no accommodations. The four accommodations included modified English, extra time, the use of a glossary, and extra time plus a glossary. These four accommodations in addition to the standard assessment were assigned randomly to the eighth grade students. The researchers found that only the modified-English accommodation narrowed the score gap between the LEP students and the English proficient students.

The Abedi et al. (2000) study relates to the theory of Abedi et al. (1998) that the modified-English assessment accommodation eliminates linguistic complexities among LEP students. The study adds to the accumulated evidence that modified-English accommodation allows LEP students to show what they know on content assessments.

Rivera and Stansfield (2001) compared English proficient students on a standard science assessment as well as a modified science assessment administered to fourth and sixth grade students in Delaware. Six forms of the assessment were administered: four were standard English and two were linguistically simplified versions of the assessments. There were 9,000 English proficient students who participated, but only a small number of LEP students who participated (6 to 23 LEP students per test form). The researchers found significant differences in test scores. The study demonstrated that a modified-English assessment did not affect the test scores of English proficient students. Thus, a modified-English assessment could be an appropriate accommodation for LEP students.

Brown (1999) examined the effect of modified-English versus the original English version of a science and a mathematics assessment on 305 students in fifth grade and 161 students in eighth grade. There were no significant differences found for LEP, special education, or regular education students in either subject or grade level. Brown compared the performance of these students on multiple-choice as well as open-ended questions. In science, high-performing students benefited from the modified-English version of the open-ended questions on the science test. There was no significant impact of language modification found on the mathematics test items. Some students proved to do better on the modified-English mathematics test items, while other students performed better on the original version.

Brown found little difference in student performance between the original version and the modified-English version of the assessment, which may be a result of the low sample size. Brown's study also shows the importance of asking assessment questions in

a way that the student understands. The study utilized a modified-English version of a mathematics assessment in order to eliminate linguistic barriers.

Lotherington-Woloszyn (1993) assessed the reading comprehension of original texts and two simplified versions of the assessment for 36 intermediate-proficiency learners of English as a second language at the university entrance level. No test version produced significantly better comprehension than any other. However, participants were able to identify which texts were simplified and could rank the original texts as hardest to comprehend. Although simplifying the text did not affect comprehension, it did affect the LEP students' attitude toward the test. This study administered assessments to beginning and intermediate LEP students. In the study of Lotherington-Woloszyn, the simplified text did not affect comprehension of the intermediate level LEP students; however, it may have affected the comprehension of beginning LEP students.

In the current study, linguistic simplification is defined as a change to both the language structure as well as the vocabulary of test items. According to Abedi (2006) this linguistic accommodation is intended to provide LEP students with a more accurate assessment. Abedi (2006) discusses that language is a form of construct-irrelevant variance on assessments for students with limited English proficiency. Abedi (2004) aptly states, "there is no reason why all students should not have content-area assessments that use clear language and provide sufficient time for them to show what they know" (p. 17).

Linguistic simplification is supported by the linguistic theory presented by Cummins. Cummins (2001b) confirmed through his Interdependence Hypothesis that learning one language gives an individual the ability to learn content knowledge and to read in another language. Cummins (2001c) proposed the model of Common Underlying

Proficiency that illustrated the transfer of knowledge learned in one language to second language contexts. Students who have not yet acquired higher levels of English proficiency, may be limited in their ability to transfer knowledge learned in one language to another language. Cummins (2001b) described this phenomenon as the Linguistic Threshold Hypothesis, which states that students must obtain a certain degree of proficiency in a second language in order to achieve academic success in that language. Linguistic simplification on assessments can allow students to demonstrate their knowledge of the content through a language other than the language of the assessment. Cummins (2001a) acknowledged the importance of tests and advocated for minority students rather than justifying their academic failure in his Theoretical Framework for Minority Empowerment. The implementation of linguistic simplification is one way to advocate for LEP students and allow them to demonstrate their knowledge and capabilities.

Cummins (2001b) Interdependence Hypothesis provided insight into how LEP students learn the reading process in a second language after first acquiring literacy in their native language. However, there is a gap in the literature where LEP students do not obtain literacy in their native language prior to learning a second language. Many school-aged LEP students face this dilemma in the United States, which leaves the Interdependence Hypothesis as a limitation in the current study.

The current study provided LEP students with a modified-English version of a mathematics assessment based on Cummins (2001b) Linguistic Threshold Hypothesis. Several studies showed LEP students successfully demonstrate their content knowledge when given linguistically modified English assessments, (Abedi & Lord, 2001; Abedi et

al., 1998; Abedi et al., 2000). Several studies also showed LEP students demonstrate their content knowledge when given assessment translation (Abedi et al., 1998; Robinson, 2010). The accommodations for LEP students are to address their linguistic needs; language-based accommodations are permitted less frequently than other types of accommodations. There is a need to examine language-based accommodations because they directly address language deficits (Rivera, Stansfield, Scialdone, & Sharkey, 2000). This study tested students in their native language (Abedi et al., 1998; Robinson, 2010) with a modified-English mathematics assessment (Abedi & Lord, 2001; Abedi et al., 1998; 2000). The next section of the literature review discusses LEP student learning, provides an overview and background of LEP students, and discusses social equity for LEP students.

Limited English Proficient Student Learning

Because the LEP student population continues to grow across the United States, (Olson & Goldstein, 1996; Peregoy & Boyle, 2008; Schmid, 2001), a consideration of the theories of LEP student learning, second language acquisition, and the time needed to acquire the English language in order to learn content knowledge is warranted. The time needed to learn a second language and the additional time that it takes LEP students to learn content knowledge in the second language is an important factor to consider. Theories in second language acquisition reflect that learning a second language is a complex process that develops in stages, with the final stage occurring after five to seven years of exposure to the language. At the final stage of language acquisition, LEP students have the capability to comprehend and produce language on grade-level in academic settings (Cummins, 2001; Krashen, 1982).

Overview and Background of LEP Students

Students who lack proficiency in English because they speak their native language are called Limited English Proficient (LEP) students or English Language Learners (ELLs). These students come from a variety of cultural and language backgrounds. They include immigrants that have moved to the United States recently as well as individuals who have been here for generations and retained their native language. The ELL term is used interchangeably with LEP. The term ELL is used more frequently because it is viewed in a positive aspect as opposed to a language deficit. This study will refer to students who lack English proficiency as LEP students.

Since 1965, there has been an increase in immigration to the United States. One in every five individuals under the age of 18 is either an immigrant or has parents who are immigrants. This group of children comes primarily from Asia and Latin America. There are greater numbers of LEP students in our nation's schools today than in the past (Schmid, 2001). Students who speak English as a second language live in all areas of the United States (Peregoy & Boyle, 2008). States with the highest number of LEP students are California, Texas, Florida, New York, and Illinois. Recent data suggest that all states have seen an increase in the number of LEP students entering American schools (Olson & Goldstein, 1996; Schmid, 2001). This growth is expected to continue. In light of recent data about the increase in the number of LEP students entering schools, it is important to have an understanding of language acquisition. The next section reviews theories related to second language acquisition.

Theories of Second Language Acquisition

Theories are essential in the behavior sciences. Parsons (1938) asserted that empirical science cannot be developed without reference to generalized conceptual schemes known as theories. Researchers can never fully investigate all of the facts concerning a certain phenomenon, but only those deemed important to the researcher. The accumulated facts are always guided by the logical structures of a theoretical proposal.

The time that it takes LEP students to become proficient in English, as well as to participate in academic assessments in English resulting in student achievement, is based on the second language acquisition theory. VanPatten and Williams (2007) state the importance of taking each word in second language acquisition as its own construct, which is critical when developing theories related to the terms. The researchers referred to *second* as any language other than one's first language. It is highlighted that *language* is deceptively simple as a construct. Theorists must define language, specifically speech production, or the unconscious knowledge system that contains information about language (grammar). The theory of second language acquisition is defined by Chomsky (1965), Krashen (1982), and Cummins (2001) in a way that explains language, how second language acquisition comes to be, and the approximate timeframe necessary to acquire a second language.

Stephen Krashen developed one of the influential theories in the field of second language acquisition in the early 1980's. This theory, known as the Monitor Theory, was the first theory intended specifically for second language acquisition. The Monitor Theory explains the relationship between acquisition and learning as well as defines the

influence of learning on language acquisition. The monitoring function is a result of learned grammar. According to Krashen (1981), the acquisition system is speech initiation, while the learning system performs the role of monitor. The monitor is the correcting or editing function when the second language learner has sufficient time to speak, focuses on the correctness of speech, or knows language rules, such as grammar.

Krashen's Monitor Theory is related to Noam Chomsky's theory of language in that both theories believe second language acquisition is naturally learned. Chomsky (1986) articulated that humans have the unique ability to acquire language. For example, children approach the task of language acquisition with a great deal of knowledge, they just need to produce already learned information in the effort to articulate a second language.

Learning a second language is a multifaceted process that develops in stages that are predictable. In the first stage, children often experience a silent period when they concentrate solely on comprehension and respond using non-verbal means of communication (Krashen, 1985). After the silent period, LEP students typically begin to produce one or two words to respond and use short repetitive phrases. Within a year or two of exposure to the English language, LEP students engage in basic dialogue and respond using simple sentences. After two or three years of exposure to the English language, they begin to use statements that are more complex, can sustain longer conversations, and state their opinions. At the final stage of language acquisition, after five to seven years of exposure to the English language, most LEP students can understand grade-level classroom activities, argue and defend academic points, read grade-level textbooks, and write organized and fluent essays (Krashen, 1982). The five

levels of language acquisition that Krashen described are a general framework for understanding how LEP students acquire language; however, language learning is an ongoing process that varies for every child.

The analysis of development of language proficiency and the amount of time that it takes LEP students to acquire proficiency in English and participate successfully in assessment created for native English speakers is of central importance. Through his research, Jim Cummins addressed this fundamental concept. Cummins (2001c) provided an analysis of the development of language proficiency in bilingual children. He differentiated between two types of communication in the second language acquisition process: a.) Basic interpersonal communications skills (BICS); and b.) Cognitive academic language proficiency (CALP). The theoretical difference between BICS and CALP provides an understanding of the process of second language acquisition. BICS can be defined as the interpersonal skills that everyone acquires in their first language regardless of IQ or academic aptitude. BICS is referred to as the cognitively undemanding manifestations of language proficiency in interpersonal situations, which take approximately two years to acquire (Cummins, 2001c). Similar to Cummins assertion, Chomsky (1965) highlighted that phonological, syntactical, and lexical skills necessary to function in everyday interpersonal contexts are universal among native speakers. CALP is the dimension of language proficiency that relates to literacy skills and is required to manipulate or reflect upon language in academic situations. CALP is cognitively demanding for the reason that it requires the ability to comprehend and produce language in academic settings. According to Cummins (2001c) it takes approximately five to seven years to acquire CALP.

Burt and Dulay (1978) discern the difference between natural communication tasks and linguistic manipulation, which differed in the quality of language produced. Burt and Dulay (1978) define the difference between natural communication and linguistic manipulation as:

A natural communication task is one where the focus of the student is on communicating something to someone else – an idea, some information, or an opinion in a natural manner. On the other hand, a linguistic manipulation task is one where the focus of the student is on performing the conscious linguistic manipulation required by the task. (p. 184)

Chomsky (1965) claimed that cognitive development begins to plateau around mid-adolescence, and basic communication skills plateau around the ages of five and six.

The implications of Cummins' second language acquisition theory may be viewed in the context of the relationship between LEP students' language proficiency and academic achievement. Cummins (2001c) believed that language minority students develop BICS more rapidly and then are assumed to have sufficient English language proficiency to excel in classrooms instructed in English as well as take assessments that are administered in English. Cummins goes on to say that educators and policymakers are unaware that the curriculum and assessments that are administered in English are cognitively demanding for the language minorities. Cummins (1984), aptly stated, "The failure of educators to take account of this distinction between BICS and CALP is actively contributing to the academic failure of language minority students. (p. 4.)

Cummins (1980a) provided empirical evidence to support his theory that it takes longer for LEP students to acquire CALP than it takes to acquire BICS when he reported

in a study that more than 400 minority language children were referred for psychological assessment. The teacher's referral forms, coupled with the psychologist's assessment reports, indicated that the children referred had better English communicative skills than academic language skills. This finding shows that LEP students acquire a high level of English communicative proficiency in a shorter time period than their cognitive academic language proficiency. The proposed study intends to determine LEP students' academic language as opposed to their communicative skills with the administration of a modified-English, translated assessment.

In another study, Cummins (1980b) showed that immigrant children who arrived in Canada after the age of six needed between five and seven years to acquire grade-level English cognitive academic language proficiency. The study of minority children referred for psychological assessment (Cummins, 1980a), as well as Cummins' observation of immigrant children, shows that a high level of English communicative proficiency in interpersonal situations can be obtained in five to seven years.

Wong Fillmore (1979) conducted a one-year longitudinal study that included five kindergarten Spanish-speaking students who were learning English. Wong Fillmore observed the ways in which the Spanish-speaking children sought out the English-speaking students and the interaction between the children. Three months into the study, the most outgoing student, Nora, had learned more English than the other children by the end of the year. Wong Fillmore believed that Nora's ability to learn English was a result of her interests, skills, temperament, and motivations that in combination made her unique personality. The researcher suggested that the differences between the five children in rate of English communicative skills acquisition had little to do with

intellectual or cognitive capacity. Therefore, it would be expected that Nora would excel academically and that she would have greater literacy skills over the other children.

Although, Wong Fillmore highlighted in her study how basic interpersonal communication skills can be developed within a year and that personality could be an indication of this development, the study did not show how the acquisition of basic interpersonal communication skills does or does not relate to the cognitive academic language proficiency. The researcher highlighted the different rates of language development within her small sample. The proposed study includes LEP students that have acquired four levels of language proficiency. All students will take an academic assessment to see if there is variation in academic achievement between students at the various LEP levels.

CALP is different and can be distinguished from BICS in English proficient students as well as LEP students (Cummins, 1980a; 1980b; Wong Fillmore, 1979). The empirical data presented in these earlier studies validate the language acquisition theory that it takes five to seven years to learn academic content in a second language (Chomsky, 1965; Cummins, 2001; Krashen, 1982). Presently, children are being mainstreamed to English-only classrooms that are instructed and assessed in English. The intention of the proposed study is to determine if LEP students have acquired CALP based on their designated LEP level on a content assessment.

Later studies have shown LEP students struggling on English content assessments. In the state of California, the high school exit exam has been developed for English speakers and has denied LEP students a diploma even when the LEP students have taken and passed all classes required for graduation. Rogers, Holme, and Silver

(2006) found, with the exception of special education students, LEP students were more likely to fail the California High School Exit Exam (CAHSEE) than all other subgroups. The CAHSEE assesses students through 72 multiple-choice questions in English-language arts, one writing task, and 80 multiple-choice questions in mathematics. Students who get 60% correct on the English test and 44% in math by the end of their senior year receive diplomas. The students who do not pass do not receive a diploma, even if they have passed all of their classes. Although approximately 20 states have an exit exam requirement, most allow students to demonstrate their proficiency through other means, such as other standardized assessments, course grades, passing classes, culminating projects, and portfolios of work if they fail the test. In California, no students are granted diplomas unless they meet the standards set by the state. California is one of only eight states that automatically deny diplomas to students who fail the exam. Gandara and Baca (2008) argued that the California state policy makes worse the high dropout rate among secondary LEP students. The stakes for students are very high. In 2006, 40% of LEP students failed both language arts and math (Rogers et al., 2006). It is imperative to determine why these students are failing and provide accommodations or an alternative way for these students to pass the CAHSEE in order to receive their diplomas.

Another study conducted by Wright and Li (2007) revealed that Cambodian newcomers were not allowed the opportunity to learn grade-level content before they were given the Texas state assessment. The researchers analyzed the opportunities that two students from Cambodia had in order to learn essential math concepts before taking the Texas Assessment of Knowledge and Skills (TAKS) math test. Qualitative methods were used to collect data through classroom observations, interviews with teachers and

staff, analysis of school documents as well as student work, and a comparison between American and Cambodian math textbooks. The researchers found that the students' teacher was practicing for the assessment with below grade-level materials. Both students had acquired basic vocabulary and could decode the English language, but six months into their fifth grade year they were just beginning to learn fifth grade mathematics content. It was also found through classroom observation that the students never learned some of the math content in Cambodia. The American textbook used in this analysis seemed to only partially represent the Cambodian mathematics curriculum. A linguistic analysis determined that there was a wide discrepancy in the level of difficulty and linguistic complexity of the students' class work and the TAKS math test.

Texas offers the math assessment only in English and in Spanish. The two students were assessed in English, which is not their native language, and both students failed. Wright and Li (2007) argued that the language barrier, coupled with mathematics content instructed at a lower level, rendered the state assessment beyond reasonable for the newcomers. The current study will be provided in Spanish to Spanish speaking students in an effort to eliminate language as a barrier to student achievement.

Empirical evidence highlighted that LEP students did not pass standardized tests that were administered in a language they did not understand (Cummins, 1980; Rogers et al., 2006; Wright & Li, 2007). The Title I section of NCLB requires LEP students to be tested in English for the content areas of reading and language arts. This is the case for students who have attended school in the United States for three or more consecutive school years, except where the local educational agency determines, on a case-by-case basis, that academic assessments in another language or form would likely yield more

accurate and reliable information on what LEP students know and can do. The NCLB does not mention testing student's content knowledge in mathematics, science, or history, in English. Several states have allowed students to test in these subjects in their primary language. The current study tested Spanish-speaking students in their native language on a mathematics assessment. This alternative approach is in response to the failing LEP students. I understand the severe impact for LEP students. The stakes are very high: students who do not receive diplomas are 75% more likely to be unemployed and are estimated to have 30% lower lifetime earnings than students with diplomas (Rogers et al., 2006).

Research supports the idea that there is a relationship between language proficiency and academic achievement. Krashen (1981) and Chomsky (1986) believed that second language acquisition is naturally learned as long as the children are able to produce learned information from their native language. Cummins (2001c) theorized BICS is acquired before CALP. Cummins articulated that curriculum and assessment designed for children that speak English are cognitively demanding for LEP students. Cummins (1984) stated that if educators fail to take into account the difference between BICS and CALP, they are contributing to the failure of the language minority students.

The question of importance is "how long does it take LEP students to acquire English as a second language and successfully participate in an assessment designed for English speakers?" Krashen (1982) claimed, at the final stage of language acquisition, which is five to seven years of exposure to the English language, most LEP students can understand grade-level content. Cummins (1984) found that it takes approximately two years to acquire BICS and five to seven years to attain grade-level content in English

regarding CALP. NCLB requires all students, including LEP students, to participate in statewide assessments even if they have not reached CALP. Researchers discuss the implications for needed changes to U.S. federal policy as well as state policy that takes into account the linguistic demands on state assessments, and provides students with ample time and opportunity to learn expected content before taking high-stakes tests (Gandara & Baca, 2008; Rogers et al., 2006; Wright & Li, 2007).

The LEP student population is increasing across the United States (Olson & Goldsstein, 1996; Peregoy & Boyle, 2008; Schmid, 2001). Because a high percentage of LEP students are failing assessments based on the linguistic demands of the assessment, there is a great need to review policy that requires these LEP students to be tested in a language they may not understand. In addition, a review of studies that discuss accommodations or alternative assessments that allow LEP students to demonstrate content knowledge is needed. The following section will include accommodations for LEP students in addition to the accommodations of translation and modified-English discussed above.

Empirical Studies of Assessment Accommodations for LEP Students

Several studies have shown that LEP students who were given linguistically modified-English assessments can demonstrate their content knowledge successfully (Abedi et al., 1998, 2000; Abedi & Lord, 2001). Several studies have shown that translation also assisted LEP students demonstrate their content knowledge (Abedi et al., 1998; Robinson, 2010). These studies suggest that reducing the impact of language factors on content-based assessments can improve the validity and reliability of such assessments for LEP students.

Butler et al., (2007) define assessment accommodations for LEP students on large-scale content assessments as the support provided for students during a test, either through modification of the test itself or through modification of the testing procedure, to help students access the content in English and better demonstrate what they know. Butler and Stevens (1997) listed the following accommodations as appropriate for LEP students:

- Assessment in native language
- Text changes in vocabulary
- Modification of linguistic complexity
- Addition of visual supports
- Use of glossaries in the native language
- Use of glossaries in English
- Linguistic modifications of test directions
- Additional example items/ tasks

Butler and Stevens (1997) support these accommodations in an effort to create a fair and equitable content assessment for the LEP students. The following empirical studies discuss the performance of LEP students in content assessments and accommodations provided to address the difficulty with the language of the written text. The accommodations include allowing extra time, providing a published dictionary or glossary, and computer testing.

Allowing extra time on an assessment is a common permitted accommodation. Abedi et al., (2000) conducted an experimental study using eighth grade NAEP items with several accommodations, including extra time and glossary, assigned randomly to

eighth grade students (N = 946). The results showed that English learners benefited from extra time, as did students already proficient in English. The accommodations in this study did not eliminate or narrow the performance gap between LEP students and English proficient students, but perhaps should be taken into consideration for all students.

Extra time is not always effective. Miller et al. (1999) conducted a study of eleventh grade LEP students with three accommodations: (a) extra time, (b) translation of instructions, and (c) bilingual dictionary. The results were inconclusive; the mean scores on the mathematics assessment were highest for students given standard testing conditions and lowest for students given extra time. This study included released Virginia SOL assessment items. The Virginia Department of Education (VDOE) allows all students to take as much time needed to complete each content assessment.

LEP students may benefit from the use of a dictionary or a glossary that provides definitions or phrases of unfamiliar or difficult words. Miller et al. (1999) conducted a study of eleventh grade students who received a bilingual dictionary for use during testing. Students who received the bilingual dictionary scored lowest on the mathematics assessment, indicating that dictionaries may provide vocabulary that is too difficult for LEP students. If this is the case, then this accommodation would not be suitable for the eleventh grade LEP students. Thurlow, McGrew, Tindal, Thompson, Ysseldyke, and Elliot (2000) conducted a reading assessment for which commercially published English dictionaries were provided to urban middle school students in Minnesota. The results indicated that students with self-reported intermediate English reading proficiency benefited from using the dictionary, whereas self-reported weaker readers did not. Abedi, Lord, Kim, and Miyoshi (2000) conducted a study of students (N = 422) in eighth grade

using NAEP science items in three test formats: (a) original format (no accommodation); (b) English glossary and Spanish translations for selected words in the margins; and (c) customized English dictionary at the end of the test booklet. The three types of test items were assigned randomly to the students. English learners scored highest with the customized dictionary accommodation. Although all accommodations helped English learners, there was no significant difference for English-proficient students between test formats, suggesting that accommodation strategies did not affect the construct. Abedi, Courtney, Mirocha, Leon, and Goldberg (2001) examined the effects of using both English and bilingual published dictionaries as an accommodation for 611 students in fourth and eighth grades in various regions of the United States. Both LEP and English-proficient students were tested in science. The researchers found that providing published dictionaries was not an effective accommodation and the administration was difficult. The researchers questioned the validity of using a published dictionary. They shared that English dictionaries often revealed content and bilingual dictionaries gave only direct translation.

Albus, Bielinski, Thurlow, and Liu (2001) conducted a study of 133 Hmong LEP students and 69 English-proficient students in three urban middle schools located in Minneapolis. The students were given a test that included four reading passages. Two of the passages were commercially published, monolingual, included a simplified dictionary, and the other two were given without a dictionary. The students that were proficient in English and had intermediate reading skills benefited from using a dictionary; students that reported they were poor readers did not benefit.

Researchers in the previous five studies examined the accommodation of using a dictionary; however, they chose a sample of LEP students and did not take their reading level into account. Their findings lead to the conclusion that using a dictionary as an accommodation will not work for all LEP students, specifically the poor readers (Abedi et al., 2000, 2001; Albus et al., 2001; Miller et al., 1999; Thurlow et al., 2000;). Students that were literate in English scored better on assessments when given a dictionary as an accommodation (Abedi et al., 2000; Albus et al., 2001; Thurlow et al., 2000). All five studies provide insufficient information by not taking into consideration the LEP student reading ability. Good readers benefit from a dictionary, poor readers do not.

Abedi et al. (2000) conducted an experimental study using eighth grade NAEP items with several accommodations, including extra time and a glossary, assigned randomly to eighth grade students (N = 946). Both English language learners and English-proficient students scored significantly higher when extra time and a glossary were provided. Extra time only or a glossary only had less impact. For English learners, providing only a glossary resulted in slightly lower scores. Specific accommodations were not studied in isolation. Consequently, it could not be determined whether one accommodation or a combination of accommodations made a difference in removing linguistic barriers.

Abedi, Courtney, and Leon (2003) compared student performance on NAEP science items of 607 students in fourth grade 4 and 542 students in eighth grade 8 who were randomly assigned a computer-based glossary and a customized dictionary. The computer-based assessment included extra time and came with a customized pop-up glossary as needed. The results indicated that the computer-based accommodation was

effective for LEP students and did not alter the validity of the assessment. Abedi (2009) compared performance of both LEP and non-LEP students in fourth and eighth grades with and without accommodations. The accommodations included the computerized administration of a math test with a pop-up glossary, a customized dictionary, extra testing time, and small-group testing. Extra time and small-group testing included only fourth grade students. The results indicated that computer testing was the most effective accommodation in providing valid and accessible assessments for LEP students in both grades. The computer accommodation also had positive effects on student performance. Although in the previous two studies (Abedi, 2009; Abedi et al.,) computer testing seems to benefit LEP students, it is difficult to draw a conclusion because computer testing was not done in isolation. Science items were targeted in Abedi et al. (2003) and math items were targeted in Abedi (2009), thus researchers could not determine whether the accommodations have an impact in other subjects.

Several important observations are evident from the analysis of the 26 empirical studies included in this review. These observations are not conclusive, but can provide direction for future research and policy development. Most of the studies examined the effects of the use of accommodations on test scores. In many cases several accommodations were provided at one time for LEP students; additional studies are needed that investigate the effects of accommodations that are given in isolation. In determining what accommodations should be used for LEP students, the effectiveness and the validity of the accommodation should be reviewed. An effective accommodation should improve performance by assisting LEP students to overcome linguistic barriers. If an accommodation for LEP students is considered valid then it should not improve the

test scores of all students, because it may change the construct that is being measured. An effective and valid accommodation for a particular LEP group of students may not be effective and valid for another group of LEP students. This study provided LEP students with a modified-English, translated assessment in order to provide clear language so that LEP students can show what they know on a mathematics assessment.

Social Equity for LEP Students

Attaining and sustaining a quality and equitable education is a dream for many people. The realization of this dream by different social groups should have a similar range of outcomes. As one recognizes the vast disparities in academic achievement in American public schools, the push for a more equitable instructional design, by means of assessing academic achievement, is crucial. Rather than conforming every student's performance to monolithic policies and expectations, factors such as the student's social and cultural status, specifically the student's linguistic barriers, need to be seen as contributing elements to the overall level of student achievement. As Paulo Freire (1970) advocates in his *Pedagogy of the Oppressed*, the education system is responsible for organizing experiences that allow students to learn content, social and academic skills, and an appreciation for democratic living as a means of changing society and making it more equitable.

As the United States continues to become more diverse culturally and linguistically, bilingual students have become one of the fastest growing groups in public schools. In 2006, about 20 percent of children ages 5-17 spoke a language other than English at home (Planty, 2008). This student population is facing large disparities in educational outcomes. According to Johnson (2005), the majority of underperforming

American schools contain large minority and language-minority populations. In response, some local educational agencies (LEA), such as the Minneapolis Public Schools, have launched bilingual education policies, which ensure equity in education for students who speak a language other than English. It is also important to consider the impact of the educator's attitudes and pedagogy on this academic scenario. The educator's decisions can often trump democratic educational aims whose purpose should ensure equal access to knowledge and opportunity for all students. Often LEP students are condemned to "lower class" status and other students are lifted to "intelligensia" status (Freire, 1970). Students in low-ability classes, LEP students in this case, tend to receive inferior instruction compared to their high-ability peers (Gamoran, Nystrand, Berends, and Lepore, 1995).

Testing LEP students with a standardized assessment in English is likely to underestimate the ability and content knowledge of the LEP students (Abedi, 2004; Valdez-Pierce, 2003). One of the major factors contributing to underperformance of the LEP students is the linguistic complexity of the assessments (Abedi et al., 1998; 2004; LaCelle-Peterson & Rivera, 1994; Solano-Flores, 2008). This inequitable representation of student achievement can result from: (a) bias from construct-irrelevant variance; (b) inequity in testing outcomes; and (c) the opportunity to learn issues, as described in Standards for Educational Psychological Testing (AERA, APA, & NCME, 1999).

NCLB established a federal education policy for the United States with a focus on accountability and high-stakes testing. This was in response to both national and international pressure that pointed to the dismal performance of American students in cross-national studies of student achievement tests. This is exemplified by analyses such

as the Programme for International Student Assessment (PISA). The PISA tests 15-year-old students in math, reading, science, and problem solving within the Organization for Economic Cooperation Development (OECD) countries. It is administered every three years, includes 40 countries, and looks at the results of 250,000 students. In 2009, that the United States was among the five least equitable counties in terms of differences in student outcomes (Perry, 2000). Arguably, this is partially because the United States has the highest poverty and income inequality rates of all the OECD countries. This is in addition to being the only country that relies on local funding for its schools, thus varying resources across the country; however, tracking and ability grouping in the United States also leads to differentiated instruction, which results in the perpetuation of low achievement scores due to lower-order objectives. More importantly, the differentiated instruction between native English speakers and LEP student results in social inequity that continues through students' educational experiences by creating a lag in achievement that is perpetuated even after students graduate.

Achievement inequality can be reduced by raising the caliber of both instructional context and instructional discourse for native English speakers and LEP students. In addition, research findings indicate that high-quality instructional discourse, characterized by student participation, coherence, discussion, and authenticity, can improve student learning when it occurs in the context of substantive academic content (Gamoran et al., 1995). Because authentic discourse is rarely used in the instruction of low-ability classes, especially LEP students, improvement in student learning is not achieved at the same levels as student achievement for native English speakers (Gamoran et al., 1995). In this inequitable model, lower-track education becomes an act of

depositing; that is, students are the depositories and the teacher becomes the depositor. Instead of communicating, the teacher makes deposits, which the students patiently receive, memorize, and repeat. This “banking system” strips lower-track students of creativity, transformation, and knowledge (Freire, 1970). This is because the lower-track students, the LEP students, are not considered conscious beings, but rather, empty minds that are passively open to the reception of deposits, unlike the native English-speaking students who are engaged in critical thinking and are viewed by their instructors as partners in knowledge (Freire, 1970).

In fact, this glaring discrepancy between the emerging consensus on the importance of teaching for higher order thinking (as evident in the passage of legislation which mandates higher state and federal standards) and what actually happens in the classroom exemplifies the notion that not only are teachers committing a great disservice to students (whether consciously or unconsciously), but also that the organizational structure of schools themselves are used as mechanisms to dominate individuals who already have very few choices and opportunities in life (Morgan, 2006).

As with Freire’s banking concept, bell hooks (2003, name uncapitalized intentionally) criticized the educational world, which aimed at what she refers to as “traditional educationalist.” She sees society fearing alternative ways of thinking and makes the point that what is needed is a political movement calling on all citizens to uphold democracy and the rights of everyone to be educated, to work toward ending domination in all of its forms. There is a need to work for justice, changing the educational system so that school is not the site where students are indoctrinated to support what hooks refers to as the “imperialist white-supremacist capitalist patriarchy,”

or any ideology, but rather where students open their minds, engage in rigorous academics, and think critically.

In the education system, it is crucial that our society maintains hope when we recognize the reality of inequities in our schools. hooks (1994) argued for a progressive, holistic education which she refers to as engaged pedagogy. It is important for educators to realize that LEP students are marginalized and discriminated against with regard to instruction and assessment. Educators need a critical consciousness of this inequity. Educators need to be aware of themselves as practitioners and as human beings in order to teach all students in a non-threatening, and anti-discriminatory way. Self-actualization should be a goal of the educators, policy makers, and students (Freire, 1970; Hooks, 1994). This type of pedagogy would be responsive to the linguistic needs of the LEP students. Overall, this type of education would take place not only inside the classroom but outside the classroom as well.

Morgan (2004) discussed how the traditional domination model in schools can be seen in the treatment of special populations such as LEP students who are disenfranchised due to language barriers. Policy makers, schools, and many mainstream teachers communicate the importance of doing things in traditional ways and give students power based on “inherited status,” such as the ability to speak English, the length of time an individual and his family have been in the U.S., and the amount of cultural understanding an individual has in terms of American culture. This can be noted in practices such as the language demands of state math tests exceeding the language capabilities of international students in the U.S. (Wright, 2007). These practices exemplify patriarchal and feudal policies in that they characterize second language

learners as second class citizens who must adapt to the rules of traditional testing. The results are that students fail state tests despite their best efforts, despite their positive progression over time. In turn, these students' performances result in the failure of their schools, as labeled by the respective states, despite the best efforts of some schools to provide a range of interventions and strategies to address the needs of the students (Wright, 2007). This has more alarming implications when one considers that it is precisely these performance assessments, meant to measure academic learning and achievement growth, that are used to place students according to ability level. This, in turn, results in lower-level objectives and instructional differentiation. LEP students acquire a high level of English communicative proficiency in a shorter time period than their cognitive academic language proficiency (Chomsky, 1965; Cummins, 2001; Krashen, 1985) and therefore are being referred for psychological assessment (Cummins, 1980).

Raudenbush, Rowan, and Chung (1993) indicated a strong correlation between track and emphasis on higher-order objectives. Also, in terms of organizational effects, it has been found that in math and science classrooms, there is a great gap in the pursuit of higher-order objectives based on whether the class is higher or lower tracked. Because LEP students tend to be lower tracked due to language barriers, their achievement is stunted by instructional differentiation. Teachers who are desperate to attain the standards outlined in state and federal mandates, ironically composed as a means of closing the achievement gap, may, in essence, be perpetuating that gap in some disciplines (Raudenbush et al., 1993).

After more than 30 years of the implementation of the Bilingual Education Act (BEA), LEP students are still facing many obstacles. A study conducted by Menken (2006) examined changes in high schools in New York City due to high-stakes testing requirements for LEP students as mandated by NCLB. It revealed how well LEP students performed on the standardized tests when a classroom language policy was adopted and when LEP students developed literacy in their first language. Schools without such policies are doing a great disservice to special populations, like LEP students, because those students are placed in lower tier classes, characterized by lower thinking objectives, in addition to requiring those same students to demonstrate their academic worth on tests written in a second language. The result of these federal, state, and institutional policies is that they promote inequities, which result in lower academic achievement and college completion rates, along with higher high school drop-out rates. As indicated earlier in the review of literature, Rogers et al. (2006) and Wright and Li (2007) highlighted that a high percentage of LEP students are failing assessments based on the linguistic demands of the assessment. There is a great need to review policy that requires these LEP students to be tested in a language that they may not understand. The following section discusses assessment and accommodation policies at the national and state level.

Assessment and Accommodation Policy

The use of high-stakes tests becomes a language policy when students with limited language ability are required to pass assessments according to the dominant language in the schools with which the students are not yet proficient (Menken, 2008). Assessments designed for English-proficient students that measure content areas may not be appropriate for LEP students. Menken (2008) highlighted that testing done in English

is a test of English for LEP students. The Standards for Educational and Psychological Testing (AERA, APA, & NCME, 1999) emphasize that assessments to be used in high-stakes testing and decision making about the LEP students must be evaluated appropriately. Given the literature (Gandara & Baca, 2008; Rogers et al., 2006; Wright & Li, 2007) that examined testing the LEP students in a language that they are still acquiring, in addition to NCLB's initiative to assess students in a "language and form" (Sec. 1111(b)(3)(C)(ix)(III)) that facilitates an accurate understanding of what LEP students know and can do, modified assessments with accommodations may be an alternative to standardized testing. The following section will include the historical context of NCLB rationale of assessments for LEP students, state test policies, as well as the differences between federal and state testing policies.

NCLB and the Rationale of Assessments

The rationale for large-scale assessment policy is complex. Rivera and Collum (2006) identify two primary factors driving the current testing movement in the United States: measurement in order to identify gaps in student achievement and inclusion of all students in the testing process. The first factor identified by Rivera and Collum was founded on the assumption that changes in instruction will occur by measuring achievement gaps among students and reporting those gaps. This tends to result in increased competition. NCLB will report on low performing schools and recognize high-performing schools. Kim and Sunderman (2004) described the competition as one of the major principles of NCLB. The researchers highlighted that competition will result in "better educational opportunities for the disadvantaged students and improve the performance of low-performing schools" (p. 5). Lazarin (2006) claimed that this kind of

competition enables student motivation and motivation of the educators in the school to get positive test results:

Standards-based reform includes three major theoretical components. First, high standards will motivate students to improve their performance if they are challenged by rigorous academic courses. Second, accurate assessments will be used to measure improvement and make important decisions about students. Third, this reform will lead to school system accountability by providing parents, policy makers, and advocates information about the performance of local schools (p. 4).

These assumptions that Lazarin highlighted are relevant to all students, including the LEP students. Rivera and Collum's factor that is driving the current testing movement, inclusion of all students, is a positive consequence of NCLB for LEP students in several sources (Gottlieb, 2006; Lazarin, 2006; Wright, 2005). Wright (2005) pointed out that schools that had neglected LEP students in the past can no longer do so due to NCLB. Schools are held accountable for the education of all students.

Similar to Wright (2005), Rivera and Vincent (1997) referred to the same inclusive measurement. The researchers claimed that, with the inclusion of LEP students in assessment, the assessment data collected could result in positive reform efforts. The requirements to include LEP students in assessments ensure that the academic needs of all LEP students are met.

LaCelle-Peterson and Rivera (1994) have cautioned against the inclusion of LEP students. The researchers cautioned that if reformers do not seriously consider the implications for specific groups of students, including LEP students, little change will occur. Current testing policy fails to acknowledge the challenges expressed by LaCelle-

Peterson and Rivera. There is a need to consider the unique instructional and assessment needs of all students. The complications lie within the measurement of the assessment tool. Does the assessment tool that works for monolingual English speakers also work for the LEP students? Unfortunately, NCLB has made schools fear accountability rather than focus on decisions that would inform educational stakeholders' knowledge of how to improve instruction and assessment for all students, especially LEP students.

Testing policies were reviewed in the literature and there was a focus on the rationale of assessment policy from a societal point of view (Gandara & Baca, 2008; Rogers et al., 2006; Wright & Li, 2007). In all cases, students are the passive recipients of the well-intentioned NCLB federal policy. The good intentions of those instituting a policy are often sidetracked when the policy intersects with the actors in a school (Abernathy, 2007). The opportunity to develop a shared understanding and explore multiple methods of assessment and educational policy is a focus of many researchers. A rationale for such research is described in the next section.

Policy

Current federal and state testing policies date back in history of education. There has been an ongoing debate about the reliability and validity of the standards for more than a century. In 1912, Joseph Rice, a journalist, requested a "scientific system of pedagogical management that would demand fundamentally the measurement of results in the light of fixed standards" (Kliebard, 1995, p. 20). Rice debated that educational reform "revolved around clear articulation of definite goals and on finding the techniques to measurement that would reveal whether those results have been realized" (Kliebard, 1995, p. 20). This conjecture is the basis of the standards-based reform, which has led to

increased measurement of student progress regarding high academic content standards. This ideal suggested by Joseph Rice leads to the current dilemma we have with our nation's education system. The education system's goal is to ensure that all children receive a high-quality education and hold educators accountable for this accomplishment.

Researchers have traced the current accountability movement to the 1983 publication of a *A Nation at Risk* (Anderson, 2004; Nichols, Glass, & Berliner, 2005). This report illustrated that competitors throughout the world were now overtaking our once unchallenged industry, science, and technology. This report highlighted mediocrity in our education system. *A Nation at Risk* launched the Excellence Movement, in which not much changed in the schools except the students were expected to do more. In 1989, it was found that American students were performing at low levels of academic achievement and George Bush, Sr. organized the nation's governors for a summit meeting on education. It was at this meeting that eight national education goals ("Goals 2000") were to be implemented by the year 2000. In 1991, The National Center on Education and the Economy joined with the Learning Research and Development Center at the University of Pittsburgh to design a national exam system. In 1994, Congress created the National Education Standards and Improvement Council to review and endorse state and national standards. There was a second Education Summit held in 1996, and the standards movement transferred from the federal to the state governments. As a result, development of standards was assigned to professional organizations and curriculum specialists.

Goals 2000: Educate America Act in conjunction with Improving America's Schools Act (IASA) were two significant forms of legislation that were relevant to LEP

students with regard to assessment. Title I section of IASA required states to administer assessments that included the following characteristics: (a) designed to assess all students; (b) are aligned with state performance standards and provide student attainment of such standards; (c) measure student proficiency in academic subjects in which the state had adopted aligned standards; (d) administered to grades 3-5, 6-9, and 10-12; (e) provide reasonable adaptations as well as accommodations for students of diverse learning needs; and (f) allow the disaggregation of results within each state, district, and school by gender, race, ethnicity, English proficiency, migrant status, and enable comparisons between non-disabled and disabled students as well as economically disadvantaged students (United States Department of Education, 1996). States were permitted to select the content standards and assessments. The LEP students were to be assessed to the extent practicable with the language form that allowed for accurate data on what students have learned (United States Department of Education, 1996).

Accountability in education led to a focus on standards, which led to more assessments that measured the specific standards. The NCLB act was signed into law in 2001 and required that LEP students be included in the academic assessments. Title I, Part A, of the Elementary and Secondary Education Act of 1965 (ESEA), Section 200.6(b) of the current regulations, requires that states assess LEP students in a valid and reliable manner that includes reasonable accommodations and, to the extent practicable, assessments in the language and form most likely to yield accurate and reliable information on what those students know and can do to determine the students' mastery of skills in subjects other than English. (Sec. 1111(b)(3)(C)(ix)(III)) (United States Department of Education, 2006).

States are working to be in compliance with the federal legislation. They face numerous challenges when assessing their LEP population. One of the challenges states face is the administration of standardized assessments to the LEP population in an effort to measure academic achievement. The reliability and validity of these standardized assessments are questioned when the purpose of the assessment is to determine academic achievement, rather than language acquisition. In an effort to make these standardized assessments fair for the LEP population, states across the nation are implementing accommodations for LEP students. The specific accommodations are grouped into two categories: Modification of the Testing Conditions (e.g., extra time or bilingual dictionaries) and Modification of the Test (e.g., linguistic simplification or translation in the student's native language). Rivera, Collum, Shafer, Willner, and Sia (2006) provided a comprehensive list of accommodations that are currently used for LEP students. The researchers highlight that, although these accommodations may be used by states, not all of the accommodations are appropriate. Empirical evidence supports the claim that accommodations may prove to be appropriate or inappropriate including, testing students in their native language or in English with translation of test items or directions, (Abedi et al., 1998; Anderson, Jenkins, & Miller, 1996; Miller et al., 1999), and testing LEP students with a modified-English assessment (Abedi et al., 1998, 2000; Abedi & Lord, 2001; Brown, 1999; Lotherington, 1993; Rivera & Stansfield, 2001). The body of research on accommodations for LEP students yields mixed results, which leads many to lower their degree of confidence in the best accommodations to use for these students. The mixed results of all of these studies also show that there is no exact way of determining which accommodation is suitable for the diverse needs of LEP students.

Federal law does not stipulate a particular approach to testing, and the current political trend does not encourage performance or alternative assessments that evaluate higher-order thinking skills. Rather, the federal government uses a uniform measure of student progress in order to meet the requirements of testing more students, more frequently, in a cost-efficient manner (Darling-Hammond, Rustique-Forrester, & Pecheone, 2005).

Because of the requirements of NCLB to close the achievement gap in math and reading, schools are devoting much of their time to math and reading and decreasing exposure to content areas that are not being tested. In addition, student interest, motivation, and cultural recognition are lost due when instruction becomes closely tied to large-scale assessments driven by the test scores (Gottlieb, 2006).

Most states have implemented the NCLB requirements to measure academic achievement by administering the same standardized test to LEP students and native English speakers. The LEP students are given limited accommodations such as extended time, breaks, or bilingual dictionaries. Each state determines which accommodations are appropriate (Rivera & Collum, 2006). Many states offer nonlinguistic accommodations that may help the students feel comfortable, but do not help them linguistically (Stansfield & Rivera, 2002). In 2005, five of the 50 states used translation as an accommodation that may have helped the student linguistically (Center on Education Policy, 2005). In the following school year, 2006-2007, a review of state assessment practices made it known that 12 states offered written native language state assessments. The following states offered written translations or made adaptations to their state assessments: Delaware, Kansas, Massachusetts, Minnesota, Nebraska, New Mexico, New

York, Ohio, Oregon, Rhode Island, Texas, and Wisconsin. Furthermore, Texas and New Mexico offered Spanish language versions of some state assessments (Bowles & Stansfield, 2008).

Wright and Choi (2006) conducted a teacher survey in Arizona. Teachers reported that English-only high-stakes testing is driving instruction for LEP students, which fails to take into account students' current levels of English proficiency and previous opportunities to learn grade-level academic content. The results indicated that students lack proficiency in the language of the test. The researchers selected teachers from schools in Arizona that had 30 or more third grade LEP students. The teachers were experienced and certified in working with LEP students and were familiar with both the educational and linguistic needs of the students. Furthermore, the selected teachers were also familiar with state and federal policies. The survey instrument included both selected response and open-ended interview questions. Both qualitative and quantitative data were collected. The data led the researchers to conclude that Arizona Proposition 203, an English-only structured immersion model, led to little or no improvement in the education of LEP students. Also, teachers were supportive of students mastering both English and Spanish and properly implementing a bilingual program into schools to assist students in learning English and achieving academic success. In terms of accountability, all teachers agreed that high-stakes tests are inappropriate for LEP students and that the focus on testing is leading to instruction practices that fail to meet the LEP students linguistic and academic needs. Wright and Choi (2006) explored the issue of inclusion of LEP students on high-stakes tests and failure to acknowledge their linguistic needs through a non-experimental design. The professional opinions of experienced teachers

were remarkably similar to experimental designs that found that testing LEP students in a language they are still trying to acquire may not provide an accurate understanding of what the students know and can do (Gandara & Baca, 2008; Rogers et al., 2006; Wright & Li, 2007).

Gandara and Baca (2008) argued that the combination of NCLB and California's state initiative to limit the use of primary purposes (Proposition 227) has created problems for LEP students. California's restrictive language policy that makes it illegal for LEP students to use their primary language for instruction contradicts federal assessment policy, which requires all students to be tested annually whether or not they speak English. Researchers have similar conclusions about similar state policies. Authors believe there should be changes made in an effort to improve the quality of education for LEP students (Gandara & Baca, 2008; Wright & Choi, 2006).

The current requirement of NCLB that LEP students should be included in academic assessments coupled with the caution to education reformers that curricular, instructional, and assessment innovations for English-proficient students may not work for LEP students (La-Celle-Peterson & Rivera, 1994), results in a need for educational reformers to be aware of the curriculum, instruction, and assessment planning for LEP students. This study focused on assessment for LEP students and provided them with accommodations in an effort to determine LEP student content knowledge, eliminating any language barrier. The next section will focus on accountability for LEP students and the Virginia SOL assessment.

Accountability for LEP Students

A summary guidance document for states issued recently by the U.S. Department of Education specifies: “If native language assessment, testing in the native language, is practicable, and if it is the form of assessment most likely to yield valid results, then a State must utilize such assessments.” A student’s limited English proficiency should not be a barrier when assessing the student’s ability or content skills. If the student is unable to demonstrate his or her abilities due to a lack of English proficiency, then the assessment should be given in the student’s native language (Bowles & Stansfield, 2008). The NCLB mandate expects LEP students to participate in a high-stakes math test in English with few accommodations. The linguistic complexity of the state assessment tools may lower LEP student performance in areas with greater language demand. Current federal policy and legislation emphasizes standards-based assessment and accountability, however, testing accommodations based on individual needs of the students are determined by the states. The field of education is continuously changing its dynamics as minorities increase across the nation and in our schools. As a result, states creating assessments and assessment policies may need to re-evaluate the way the LEP students are assessed.

Darling-Hammond (2004) suggested that assessment is helpful in creating accountability to provide relevant, valid, timely, and useful information to differentiate instruction to better facilitate student learning. Genuine accountability requires high standards and more support for students and teachers. The United States has developed high educational standards for all students. Educational policies have been developed and implemented in an effort to support students in reaching these standards. Specifically,

federal policy indicates that the LEP students should be provided with appropriate language accommodations as needed on an individual basis to be certain accurate information is obtained from educational testing. Au (2007) found that certain types of high-stakes testing led to curricular content expansion, the integration of knowledge, and more student-centered, cooperative pedagogies. Au's findings suggested that high-stakes tests encourage curricular alignment to tests. The federal education policy indicates that states are permitted to administer content assessments in a non-English language if a student's lack of English proficiency impedes the test data (US Congress, No Child Left Behind Act of 2001). States that implement this policy may receive accurate assessment results that determine student's content knowledge without language being a barrier. In the United States, successes, failures, best practices, and proficiency are all determined by test scores. Ultimately, test scores have become the objective of education within the NCLB regime. The next section will focus on the Virginia standards of learning assessment and accountability for LEP students in the state of Virginia.

Virginia Standards of Learning (SOL) Assessment

The Virginia Department of Education (VDOE) and the Board of Education have used the commonwealth's established process for adopting and revising academic standards to incorporate content from the Common Core State Standards into the SOL. In doing so, the board and department have ensured that expectations for teaching and learning in Virginia schools are comparable to, or in some instances exceed, those of the voluntary national standards.

(http://www.doe.virginia.gov/testing/common_core/index.shtml, March 12, 2012)

The Common Core State Standards have been created in an effort to provide young people with a high-quality education. Teachers, parents and community leaders have all contributed to the creation of the Common Core State Standards. The standards communicate clearly what is expected of students at each grade level. Teachers are better equipped to know exactly what they need to help students learn and establish individualized benchmarks for them. The Common Core State Standards start in the early grades, thus enabling teachers to take the time needed to teach core concepts and procedures well and to give students the opportunity to master them. With students, parents, and teachers all working together for shared goals, students are ensured to make progress each year and graduate from school prepared to succeed in college and beyond.

The National Governors Association Center for Best Practices and the Council of Chief State School Officers strongly believe that all students should be held to the same high expectations outlined in the Common Core State Standards. This includes LEP students. However, these students may require additional time, appropriate instructional support, and aligned assessments as they acquire both English language proficiency and content area knowledge. It is recognized that LEP students are a heterogeneous group with differences in ethnic background, first language, socioeconomic status, quality of prior schooling, and levels of English language proficiency. Effectively educating these students requires diagnosing each student instructionally, adjusting instruction accordingly, and monitoring student progress closely. The development of native-like proficiency in English takes many years and will not be achieved by all LEP students especially if they start schooling in the United States in later grades (<http://www.corestandards.org/the-standards>, March 12, 2012).

Accountability for LEP Students

LEP student participation in the Virginia Assessment Program is based on Section 1111(3)(C)(v) of NCLB, which requires LEP students to participate in state content assessments. NCLB also states in Section 1111(3)(C)(v)(ix)(III) that LEP students “shall be assessed in a valid and reliable manner and provided reasonable accommodations on assessments” to yield accurate data on what such students know and can do in academic content areas until such students have achieved English language proficiency. Therefore, as with all students enrolled in Virginia public schools, all LEP students participate in the Virginia Assessment Program.

An LEP committee, including the student’s teacher, an administrator, and a parent or guardian, determines how the LEP student will participate in the Virginia Assessment Program and which, if any, testing accommodations are appropriate. Table 1 provides an overview of exemptions available to LEP students:

Decisions about how an LEP student will be tested should be made for each content area included in the SOL assessments. Consideration should be given to the LEP student level of English proficiency, the level of previous schooling in the home language, and the amount of schooling the LEP student has received in the United States. LEP students may be provided testing accommodations that involve changes to the testing procedures, testing materials, or the testing situation in order to allow students meaningful participation in an assessment. Accommodations must not alter the test content being measured.

Accommodations for LEP students are designed to address unique linguistic needs during the normal process of English language acquisition. The accommodations

are given with the intent to offer LEP students the opportunity to demonstrate knowledge in a content area regardless of their English language proficiency level, therefore providing accurate information about the LEP student's content area achievement. Accommodations are not to provide LEP students an unfair advantage over students tested without accommodations.

Accommodations for the Virginia SOL assessments should be selected from those used routinely during classroom instruction and classroom assessment. Some accommodations that are used during classroom instruction and during classroom assessments may not be available on the SOL assessments. Unfamiliar accommodations during testing may negatively impact the student's performance. The LEP Committee should determine the appropriate accommodations for each SOL assessment for LEP students.

In Virginia, to determine an LEP student's English language proficiency level, a student receives an overall score on the ACCESS for ELLs assessment. This assessment is used to determine an LEP student's ability to read, write, listen, and speak. Students with Virginia English Language Proficiency Levels 1 through 5 are considered limited English proficient and may be eligible for accommodations.

Accommodations available to LEP students as deemed appropriate by the LEP committee fall into two categories: 1) direct linguistic and 2) indirect linguistic accommodations. The direct linguistic accommodations involve adjustments to the language of the test and, on the Virginia SOL assessment, are read-aloud, bilingual dictionary, English dictionary, and Plain English Mathematics. The indirect linguistic accommodations involve adjustments to the conditions under which the LEP students

take the test and include flexible schedule, a template to show one item at a time on a paper/pencil test, and mark in test booklet or respond verbally.

The information obtained in this subsection was taken from the document that provides information about the participation of LEP students in the Virginia Assessment Program found on the Virginia Department of Education website.

(http://www.doe.virginia.gov/testing/participation/lep_guidelines.pdf) Retrieved February 2, 2012.

Individual Disability Education Act (IDEA)

NCLB requires all students to be included, even students who have once been exempted from state assessments due to special needs or limited English proficiency. NCLB provides clear instructions regarding these students in Section 1111(3)(C), requiring states to test LEP students with “assessments in the language and form most likely to yield accurate data on what such students know and can do in academic content areas, until such students have achieved English language proficiency.” The use of tests in a language other than English is permitted for a period of three years, but NCLB allows schools to extend the testing in a non-English language for an additional two years if the student’s lack of English proficiency would yield invalid and unreliable results. (US Congress, No Child Left Behind Act of 2001).

Statute and Regulations

In addition to Title I regulations of the ESEA, the 2006 Individuals with Disabilities Education Act (IDEA) included a provision related to the evaluations for eligibility and re-eligibility for special education and related services. The IDEA regulation states explicitly that state educational agencies shall ensure, at a minimum, that

tests and evaluation materials “ are provided in the child’s native language or other mode of communication and in the form most likely to yield accurate information on what the child knows and can do academically, developmentally, and functionally, unless it is clearly not feasible to so provide or administer.” 34 C.F.R. § 300.304(c)(1)(ii). (United States Department of Education, 2006). Assessments and evaluation materials are also supposed to be selected and administered to students with impaired sensory, manual, or speaking skills in a way that “the test results accurately reflect the child’s aptitude or achievement level or whatever other factors the test purports to measure, rather than reflecting the child’s impaired sensory, manual, or speaking skills except where those skills are the factors that the test purports to measure.” 34 C.F.R. § 300.532 (United States Department of Education, 2006). The provisions listed in the IDEA policy related to the evaluations of special education students similarly apply to the academic testing of LEP students in all content areas. LEP students have a linguistic barrier which could be considered a learning deficit. Therefore, according to the IDEA regulation, LEP students should be provided accommodations, including an assessment administered in their native language or other mode of communication that accurately reflect their achievement level on the content test administered, rather than reflecting the child’s language deficit.

Virginia Regulations

The VDOE has used the commonwealth’s established process to adopt and revise the academic standards to incorporate content from the Common Core State Standards into the Standards of Learning (SOL). The Common Core State Standards articulate rigorous grade-level expectations in the areas of mathematics and English language arts.

These standards identify the knowledge and skills students need in order to be successful in college and careers. Students with disabilities are eligible under the IDEA to be challenged to excel within the general curriculum and be prepared for success in their post-school lives. These common standards provide an opportunity to improve access to rigorous academic content standards for students with disabilities.

Students with disabilities are a heterogeneous group with one common characteristic: the presence of disabling conditions that significantly hinder their abilities to benefit from general education (IDEA 34 CFR §300.39, 2004). Therefore, how these high standards are taught and assessed is of the utmost importance in reaching this diverse group of students.

In order for students with disabilities to meet high academic standards and to fully demonstrate their conceptual and procedural knowledge and skills in mathematics, reading, writing, speaking and listening, their instruction must incorporate supports and accommodations.

(<http://www.corestandards.org/assets/application-to-students-with-disabilities.pdf>, March 12, 2012).

Students with disabilities in Virginia include identified students under IDEA and under section 504 of the Rehabilitation Act of 1973. The IDEA regulations require that all students with disabilities participate in the state's accountability system. More specifically, students with disabilities are expected to participate in all content area assessments that are available to students without disabilities. Students with disabilities may participate in the SOL assessments either with or without accommodations, the Virginia Grade Level Alternative (VGLA), the Virginia Substitute Evaluation Program

(VSEP), the Virginia Modified Achievement Standards Test (VMAST), or the Virginia Alternate Assessment Program (VAAP). The SOL in the content areas of English, mathematics, science, history/social science are intended to set reasonable targets for what students are expected to learn. SOL assessments inform administrators, teachers, and parents what the students are learning and hold schools accountable for teaching the SOL content. For all students with disabilities identified under IDEA, the Individualized Education Plan (IEP) team determines how the student will participate in the accountability system. The 504 committee determines how the students identified under Section 504 of the Rehabilitation Act of 1973 will participate in testing. Students with disabilities may participate in SOL assessments with or without accommodations. Testing accommodations for students with disabilities are defined by the state of Virginia as changes in the administration of an assessment in terms of how the test is presented or how the student responds to it. Categories of testing accommodations include time, scheduling, setting, presentation, and response. Although accommodations do not change the construct intended to be measured by the assessment they do provide equity and serve to level the playing field for students with disabilities. When used appropriately, accommodations reduce or eliminate the effects of a student's disability without reducing learning expectations or providing advantage.

(http://www.doe.virginia.gov/testing/participation/participation_va_accountability_system.pdf February 2, 2012.)

Court Cases

IDEA is the primary federal statute that authorizes federal aid for the education of children with disabilities. The statute has two key components: (1) due process provisions

detailing parental rights, and (2) a permanently authorized grant program that provides federal funding to states. States that receive federal funds are required to provide a free, appropriate public education (FAPE) to all children with disabilities in the least restrictive environment (LRE). This section summarizes and discusses court cases that ensure students have received FAPE and LRE in accordance with IDEA.

Section 34 C.F.R. § 300.532 under IDEA states the following: State educational agencies shall ensure, at a minimum, that: (a) Tests and other evaluation materials are provided and administered in the child's native language or other mode of communication, unless it is clearly not feasible to do so. (b) Tests are selected and administered so as best to ensure that when a test is administered to a child with impaired sensory, manual, or speaking skills, the test results accurately reflect the child's aptitude or achievement level or whatever other factors the test purports to measure, rather than reflecting the child's impaired sensory, manual, or speaking skills, except where those skills are the factors that the test purports to measure.

In the case of *M.W. v. Clarke County School District*, 2008 U.S. Dist. LEXIS 75278 (M.D.Ga. Sept. 29, 2008) Plaintiffs, parents of M.W., an autistic child, appealed the final order of Administrative Law Judge (ALJ) Chris A. Foster that found the Defendant Clarke County School District provided M.W. FAPE in LRE in accordance with IDEA. M.W.'s parents argued Clark County School District failed to test M.W. in Mandarin Chinese, which led to an inaccurate evaluation, inappropriate IEP goals and objectives, and inappropriate placement of M.W. in the self-contained autism classroom.

The federal regulations during the time of the ALJ's final decision provided that when a child is evaluated for eligibility for services under the IDEA, all assessments or

evaluation materials will be "provided and administered in the child's native language or other mode of communication, unless it is clearly not feasible to do so." 34 C.F.R. § 300.532(a)(1)(ii) (2006). The ALJ concluded that M.W.'s parents native language testing claim was without merit for four reasons: (1) the psychological and the Assessment of Basic Language Learning Skills test (ABLLS), demonstrated that it was not feasible for Clark County School District to perform evaluations in Mandarin Chinese; (2) the purpose underlying the requirement that testing be in a student's native language was met in this case because the test was calculated to determine M.W.'s need for special education services, not his level of English proficiency; (3) Clark County School District correctly noted that its psychological testing was not conducted under standard conditions and that the results were not a true indication of M.W.'s ability; and (4) Clark County School District considered all relevant information, including M.W.'s performance in the classroom environment, in developing his educational program.

The Court agreed and found there was no violation of IDEA's native language testing requirement with respect to the psychoeducational assessment and the ABLLS administered in this case. The two types of assessments have different purposes. The psychoeducational evaluation was used to determine whether M.W. was eligible for special education services. The psychoeducational evaluation would consequently implicate the need for the native language testing requirement. The native language testing requirement ensures that "materials and procedures used to assess a child with limited English proficiency measure the extent to which the child has a disability and needs special education, rather than measuring the child's English language skills." 34 C.F.R. § 300.532(a)(2) (2006). It is unquestionable that M.W. was deemed eligible for

autism services based on the results of the Kennedy psychoeducational evaluation. Because the purpose of the psychoeducational evaluation was simply to determine M.W.'s eligibility for autism services, the failure to conduct the evaluation in Mandarin Chinese was irrelevant.

In contrast, the ABLLS did not implicate the purpose underlying the native language testing requirement. The ABLLS is not used to determine a child's eligibility for services; instead, the Clark County School District expert, Dr. Montgomery, testified that the purpose of the ABLLS was to determine the language skills of the individual in the language of instruction. ABLLS is an assessment and a curriculum guide. Current federal regulations provide, "The screening of a student by a teacher or specialist to determine appropriate instructional strategies for curriculum implementation shall not be considered to be an evaluation for eligibility for special education and related services." 34 C.F.R. § 300.302 (2008). Clark County School District did not need to conduct the ABLLS in M.W.'s native language.

M.W.'s parent's expert testified that it would not have been feasible to administer a psychoeducational evaluation in Mandarin Chinese, however, believed that using interpreters to help administer certain portions of a psychoeducational evaluation would affect the accuracy and legitimacy of the results. Dr. Montgomery testified that the administration of a Mandarin Chinese language cognitive assessment to a student in Georgia would be difficult because in order to produce valid results, any such assessment would have to be (1) written in Mandarin Chinese; (2) normalized to a United States population; and (3) given by a licensed psychologist or physician whose first language

was Mandarin Chinese. The Court found it was not feasible to administer such an assessment in Mandarin Chinese.

In addition to the Court ruling, M.W.'s parent's expert who evaluated M.W. reported that M.W. responded to items administered in English by responding in English. M.W. responded mostly in English and offered few correct responses in Chinese. These responses suggest that M.W. may not have needed the Mandarin Chinese translation for testing as perceived by M.W.'s parents. Additionally, it was noted that M.W. made significant educational progress in the classroom despite any language barrier. Therefore, the failure to conduct any assessment in M.W.'s native language did not deny M.W. FAPE. Furthermore, there is not a version of the ABLLS in Mandarin Chinese, which made it not feasible to administer this assessment in M.W.'s native language. More importantly, English was the language of instruction and M.W.'s teacher needed to know how M.W. did in English, rather than Mandarin Chinese. The court concluded that it was not feasible to administer a Mandarin Chinese ABLLS to M.W. because the instrument did not exist and testing in Mandarin Chinese would not have provided M.W.'s instructors with the information they needed to develop a curriculum in English.

This court case may have had different results if M.W. was being tested in a specific content area rather than being evaluated for special education services. The psychoeducational evaluation implicated the ABLLS to determine M.W.'s language learning skills, which was administered to determine M.W.'s English proficiency. M.W. made academic gains in the self-contained autism classroom. Policy makers may want to revisit certain policies. Specifically, IDEA states that assessments or other evaluation materials shall be "provided and administered in the child's native language or other

mode of communication, unless it is clearly not feasible to do so." 34 C.F.R. § 300.532(a)(1)(ii) (2006). Although in the case of M.W. it was not necessary to administer the psychoeducational test or ABLLS in Mandarin Chinese, testing in a student's native language in some cases allows for accurate testing results when certain content areas are being assessed. Similar to what ALJ ruled in this case, all students and circumstances should be judged on a case-by-case basis to determine appropriate accommodations.

In a similar case, a parent filed a request for a partial due process hearing that challenged the sufficiency of her child's IEP as well as the testing administered: D.R. v. Dept.of.Ed.D.Haw., 2011 U.S.Dist. LEXIS 122086 (HI. Oct. 21, 2011). D.R. attended Variety school where an IEP meeting took place in June to determine D.R.'s educational program. Variety school noted in the IEP that D.R. had decreased postural tone and visual perception and to address those needs D.R. would receive occupational therapy. D.R.'s mom agreed with the IEP and did not indicate that she felt D.R. was not being educated in the LRE. D.R. was administered a screening for Central Auditory Processing Disorder and passed it. Once D.R. passed this assessment, according to the audiologist, the protocol for the evaluation called for no further testing. The audiologist reported that D.R. had normal auditory processing abilities and noted he was below normal in other areas. D.R. was eligible for speech therapy and one-on-one adult support all day in order to address behavioral needs. D.R.'s mom made a unilateral decision to move D.R. to Loveland Academy. Concerns were raised by Loveland Academy that the IEP was deficient and prompted D.R.'s mom to file for a due process hearing indicating D.R. was not placed in the LRE and his IEP was deficient both procedurally and substantively.

One of the claims raised by D.R.'s mom was that the screening of Student Central Auditory Processing Disorder should have been replaced by a full assessment. D.R.'s mom depended on 20 U.S.C. § 1414(a)(1)(E), which provided that “the screening of a student by a teacher or specialist to determine appropriate instructional strategies for curriculum implementation not be considered to be an evaluation for eligibility for special education or related services.” The screening was not intended to determine appropriate instructional strategies for curriculum implementation. It was intended to determine if D.R. had Central Auditory Processing Disorder. Moreover, the screening was not determined as an evaluation for special education or related services as there was no question that D.R. was eligible for those services.

D.R.'s mom also argued that the Variety School did not properly evaluate D.R.'s speech deficit because the Variety School failed to determine that D.R. might have a submucous cleft palate. Variety School did not fail to recognize that D.R. might require special education services, in general or in the area of speech therapy according to 20 U.S.C. § 1412(a)(3), which provided that conditioning federal funding for state special education programs on a requirement that states have policies and procedures to identify, locate, and evaluate all children with disabilities residing in the state. D.R. had already been identified as eligible for special education services, and the IEP included speech therapy. The court found that the Variety School complied with the procedural requirements of IDEA and that the June 2010 IEP was reasonably calculated to enable D.R. to receive educational benefits.

In the case of *S.F. v. McKinney Independent School District*, 2012 U.S. Dist. LEXIS 29584 (E.D.Tex., Mar. 30, 2012) Plaintiffs, parents of S.F., a deaf child with

autism, filed an action pursuant to IDEA that sought reimbursement of attorney's fees and expenses incurred in successfully defending an administrative special education due process hearing initiated by Defendant McKinney Independent School District.

S.F. has been deaf since birth and S.F.'s parents notified McKinney Independent School District that S.F.'s primary mode of communication was sign language. A full individual evaluation (FIE) in April 2006 concluded that S.F. was eligible for special education services and her disabilities were categorized as autism, auditory impairment, and speech impairment. McKinney Independent School District said that S.F. could be served in a self-contained classroom. In February 2008, the Admission, Review, and Dismissal committee (ARDC) met to develop a new IEP. In May 2008, S.F.'s parents requested ARDC to meet again to express their concern that there was no teacher that was fluent in sign language to instruct in sign language. The McKinney Independent School District believed that S.F.'s placement in the self-contained classroom addressed her needs as both a student with autism and an auditory impaired student. In October 2008, S.F.'s parents requested another ARDC meeting to discuss placing S.F. at The Plano Regional Day School Program for the Deaf. The ARDC proposed that S.F. be re-evaluated, and another ARDC meeting was held on December 2008 to review the re-evaluation plan. In February 2009, an annual ARDC meeting was convened to review and revise S.F.'s IEP. It was reported that S.F. progressed in the areas of reading, communication, and behavior. New IEP goals and objectives addressed areas of academic skills, language arts, social skills, mathematics, communication skills, independent living skills, and adaptive behavior skills that were reviewed and approved by the ARDC. S.F. was to continue in the self-contained classroom. S.F.'s parents

participated in the meeting, but disagreed with the recommendations. Later in February 2009, the new FIE report was complete for S.F. One of the standardized assessments used was the Autism Diagnostic Observation Schedule (ADOS). In May 2009, ARDC meetings were held to review the FIE. S.F.'s parents disagreed with the FIE recommendations, because it did not recommend a placement in a deaf education classroom with deaf peers. The ARDC recommended that S.F. continue in the self-contained classroom at McKinney Independent School District. After the school district rejected the request, S.F. was home schooled for the 2009–2010 school year. In September 2009, S.F.'s pediatrician requested that McKinney Independent School District conduct an independent educational evaluation (IEE) of S.F. Instead of granting the IEE, the school district filed for a due process hearing to determine the appropriateness of its FIE.

The special education hearing officer found that the evaluation of S.F. was not appropriate and found that the school district violated IDEA because the district used the ADOS to evaluate S.F. when ADOS guidelines say that it should not be used with deaf individuals. IDEA regulations require that in conducting evaluations of a child with a disability, each public education agency “must ensure that assessments and other evaluation materials used to assess a child are administered in accordance with any instructions provided by the producer of the assessment.” 34 C.F.R. § 300.304(c)(1)(v). Furthermore, the communication assessment tool VB-MPP was not administered in sign language, S.F.'s natural mode of communication. IDEA regulations provided that the public agency must ensure that assessment and evaluation materials are “provided and administered in the child’s native language or other mode of communication and in the

form most likely to yield accurate information on what the child knows and can do academically, developmentally, and functionally, unless it is clearly not feasible to provide or administer.” 34 C.F.R. § 300.304(c)(1)(ii).

In a fourth case, a student was denied FAPE: *Marple Newtown Sch. Dist. v. Rafael N.*, 2007 U.S. Dist. LEXIS 62494 (E.D.Pa. Aug. 24, 2007). Federal regulations required an IEP team to take the language needs of the child into account. 34 C.F.R. § 300.324(a)(2)(ii). Pennsylvania law also mandated that school districts provide programs for students whose dominant language is not English to facilitate the student's English proficiency through bilingual-bicultural or ESL instruction. 22 PA. CODE. § 4.26. The appeals panel found R.N.'s IEP inappropriate because R.N. was not evaluated in his native language. This violates the IDEA. 20 U.S.C. § 1414(b)(3)(A)(ii) (requiring that evaluations must be "provided and administered in the language and form most likely to yield accurate information on what the child knows and can do academically, developmentally, and functionally, unless it is not feasible to so provide or administer"); 34 C.F.R. § 300.304(c)(1)(ii) (stating that evaluation must be "administered in the child's native language or other mode of communication and in the form most likely to yield accurate information on what the child knows and can do academically, developmentally, and functionally, unless it is clearly not feasible to so provide or administer). It was clearly feasible to evaluate R.N. in his native language, as the administrative record included reports from bilingual evaluators including Drs. Morante, Goldwater, and Ferreira, and not doing so violated the IDEA.

While the District argues that R.N.'s lack of progress in the acquisition of English is due to his cognitive limitations, R.N.'s evaluators consistently testified that appropriate,

individualized, and intense ESL instruction would help the student bridge the gap between his fluency in Spanish and his fledgling English language skills. Dr. Goldwater shared that the student had learned English and that he was capable of more. Dr. Ferreira testified that there must be a structured and directed programmatic effort to teach the student English and noted that "if the student had the capacity to learn Spanish, a language, he had the capacity to learn the English language."

It was found that the District denied R.N. FAPE because R.N.'s IEP was not reasonably calculated to address his language needs and ensure he received a meaningful educational benefit. In this case, R.N.'s evaluators testified that intense ESL instruction would help bridge the gap between R.N.'s Spanish and English skills. Although, Dr. Ferreira testified that R.N. had the capacity to learn Spanish, he had the capacity to learn English. This may be true; however, before the student acquires English, he should be evaluated in his native language. In this case, R.N. was not evaluated in his native language, resulting in a violation of IDEA.

The findings of these court cases were decided based on the language of the IDEA policy. Under NCLB, schools are held accountable for all student performance and it is important to be consistent with test administration for both LEP and special education students. In planning for the administration of mandatory standardized tests, it is imperative to be consistent for all students so that NCLB and IDEA are not violated. States and schools must use appropriate accommodations for students with disabilities and LEP students who have a language deficit. If appropriate accommodations are not put into place for these students, student performance on content assessments may not reflect accurate assessment results and be in violation of NCLB and IDEA. The following

section will summarize empirical articles that review assessment accommodations for special education students.

Empirical Studies on Assessment Accommodations for SPED Students

Several studies showed special education students demonstrating their content knowledge successfully when they were given computer administration (Calhoon, Fuchs, & Hamlett, 2000; Russell & Plati, 2000), oral presentation (Bolt & Thurlow, 2007; Elbaum, 2007; Huynh and Barton, 2006; Johnson, 2000;), extended time (Cohen, Gregg, & Deng, 2005; Eliot & Marquart, 2004; Lewandowski, Lovett, & Rogers, 2008; Zuriff, 2000), and modified-English (Johnson & Monroe, 2004). The majority of these studies suggest that the accommodations provided for special education students showed a positive effect on student test scores.

Calhoon et al. (2000) compared the effects of several test accommodations such as standard administration, teacher-read text, computer-read, and computer-read with video on math performance assessment scores for 81 secondary students with learning disabilities. These special education students all had math and reading IEP goals. The teacher-read, computer-read with video conditions significantly increased scores obtained on performance assessments completed in the standard administration condition. Effect sizes between the standard condition and each of the accommodated conditions were weak. Students with learning disabilities of varying reading ability levels benefited significantly from the accommodations.

Additional studies are needed to determine whether a reading accommodation is more effective for students with learning disabilities at different reading levels. Further research should also investigate whether learning disabled students react differently to the

read-aloud provision in different content areas. Correspondingly, further research should examine the difference between human and computer read-aloud with regard to effect and student perception about the different reading accommodations.

Russell and Plati (2000) investigated the effect of computer versus paper-and-pencil administration of the Massachusetts Comprehensive Assessment. This test measures student performance on open-ended items that required written responses. The sample of students included 289 eighth grade and tenth grade students with unknown disabilities. Students who wrote their compositions on the computer produced longer responses and received higher scores for their responses. This effect was significant at both grade levels but was larger for eighth grade students. It was noted that all students in the sample had high keyboarding speed.

It was not possible to examine the mode of administration effect across the full range of student performance levels because all the students that were included in the sample performed at low levels on the composition items. All students who were familiar with computers and performed at a high level of keyboarding speed made it difficult to examine the mode of administration effect for students that had low levels of keyboarding and students that were not familiar with computer.

Two researchers conducted studies to determine whether reading mathematics items on a test significantly affected the scores of students with and without learning disabilities. Johnson (2000) looked at 115 fourth grade students, of which 33 % received special education services in reading. The scores of the students with learning disabilities increased when math items were read to them. Reading the math items to non-learning disabled students had no effect on their performance. The small sample size contributed

to the limited power of the study to detect possible significant differences among scores, and the lack of a special education control group makes it difficult to compare students with learning disabilities. Elbaum (2007) conducted a similar study that compared the performance of students with and without learning disabilities on a mathematics assessment using a standard administration and a read-aloud accommodation. A total of 625 middle and high school students (388 with learning disabilities) took two equivalent 30-item multiple-choice tests. Results of the oral accommodation for students on the mathematics assessment yielded greater gains for the students with learning disabilities than those without. On the secondary mathematics assessment, greater gains were seen for students without disabilities than for students with learning disabilities. Elbaum's larger sample size contributed to the power of the study, and validates Johnson's idea to compare students with learning disabilities to a control group.

Bolt and Thurlow (2007) examined the read-aloud accommodation performances of students with reading disabilities on math assessment items. The researchers conducted analyses across three consecutive years of data from an elementary and middle school statewide assessment program. The elementary data indicated a positive impact on student performance on items that were classified as difficult to read. The lack of information of the severity of the reading disability limits the ability to generalize the results to students with specific learning disabilities. Furthermore, the absence of a control group consisting of students without reading disabilities makes it difficult to compare with regular education students. Researchers have found the read-aloud accommodation positively impacted student performance on math items (Bolt &

Thurlow, 2007; Elbaum, 2007; Johnson, 2000). Continued research is needed to examine the effects of reading a test aloud in content areas other than math for all grade levels.

Huynh and Barton (2006) examined the effect of oral administration accommodation on test structure and student performance on the Reading test of the South Carolina High School Exit Examination (HSEE) to tenth grade students. There were three groups in the study. The first group included students with disabilities (SWD) who were given the oral administration accommodation. The second group included SWD given the regular form of the assessment without oral administration. The third group included students without disabilities that took the regular version of the assessment without oral administration. After controlling for background variables, performance of SWD with oral administration accommodation was equal to that of SWD under regular administration. The researchers concluded that oral administration accommodation for students with severe disabilities made the assessment fair for these students. The groupings allowed the researchers to make a comparison among students and accommodations. The type and severity of the student's disabilities should have been identified. If a student's disability is identified to have more or less severe deficits, the results may not be generalized to all students.

Eliot and Marquart (2004) examined the effect of allowing extra time as a testing accommodation on a mathematics assessment for students with disabilities, students educationally at risk in math, and students without disabilities. Data for the analyses came from 97 eighth grade students that completed two equivalent mathematics assessments each under different testing conditions (standard time 20 minutes; extended time 40 minutes.). There were no significant differences by disability status. Follow-up

surveys indicated that the majority of students reacted positively to the accommodation of extra time. The small group of students hindered the analysis of data. Only very large discrepancies in performance can be statistically significant due to a small sample.

Zuriff (2000) examined in five different studies the validity of scores on an examination taken by students with and without learning disabilities under conditions of extended time. Participants included college, graduate, and professional students. Both students with and without disabilities benefited significantly from extra time. This study lacks individual student data, which makes it difficult to exclude the possibility that there is a subgroup of students with disabilities who benefit from extra time. Research should concentrate on determining the conditions under which students benefit from extra time on assessments.

Cohen et al. (2005) investigated the influence of extended time and content knowledge on the performance of 1,250 ninth grade students with learning disabilities who took a math test with an extended time accommodation and 1,250 students who were not diagnosed with a disability and were not provided with an accommodation. The results suggested that the students' accommodation status did not contribute to understanding the differences in test performance. The data suggested that math competency was different among all students regardless of their reading level or accommodation. A similar smaller study conducted by Lewandowski, Lovett, and Rogers (2008) examined the effect of the extended time accommodation on reading comprehension. Sixty-four high school students (32 with learning disabilities) were given the Nelson Denny Reading Comprehension subtest under various time conditions. Nondisabled students benefited more from extended time than did students with learning

disabilities. Students with learning disabilities and extended time attempted as many questions as nondisabled students under standard time conditions. The mixed results on student performance given extra time (Cohen et al., 2005; Lewandowski et al., 2008) leads to the conclusion that additional research is needed to determine the effects of particular accommodations for specific students.

Johnson and Monroe (2004) examined the impact of simplified language on a state mathematics performance assessment for 1,232 seventh grade students. General education students and LEP students did not benefit from this accommodation. Students receiving special education services (N = 138) did benefit from the simplified language. Special education student scores still remained significantly lower than the general education students. A few explanations could be provided as to why the findings from this study are inconsistent and may change with future research. For example, too few students who receive special education services were included, only mathematics was targeted, and there were various subgroups of students included who did not receive special education services. The researchers did not specify the LEP student language proficiency level, and this could also have an impact on whether simplified language improved student performance on the mathematics assessment.

Elliott, Kratochwill, and McKeivitt (2001) documented the testing accommodations educators use and investigated the effects the accommodations had on individual test performance. The sample included 100 fourth grade participants; 41percent of the students had a learning disability, emotional disturbance, a cognitive disability, speech or language impairment, autism, or health impairment. The students received a standard package of accommodations including extra time, support with

understanding directions and reading words, and verbal encouragement. The students may also have received accommodations recommended by their teachers that were included in their individualized education plan. More than 75 percent of the testing accommodation packages suggested within the student's individualized education plan had a large effect on their test scores. Testing accommodations had a positive impact on students without disabilities. The effects of recommended accommodations were not positive for a few students. Future research with a larger sample of students may help determine when accommodations should be used. Questions remain concerning the point at which standard administration of an accommodation changes the content being measured.

The empirical studies reviewed above investigated whether the use of accommodations gave students with disabilities a differential boost in test scores compared to students without disabilities. Despite the variability in the characteristics of the accommodations from the 14 studies conducted from 2000 to 2008, the findings point to further directions for research. In terms of results, accommodations, including computer administration, oral presentation, extended time, and modified-English, showed a positive effect on student test scores across studies. Limitations of several of the studies included unknown variations among students and small sample sizes that did not provide adequate statistical support. These limitations encourage future research to replicate the studies for validation as well as to investigate associations to specific disabilities. Further research could include a clear definition of the constructs tested and greater clarity in the accommodations needed by individual students.

Summary

The NCLB, federal education policy requires all students, including students with special needs and LEP students, to be assessed each year. NCLB and IDEA provide clear instructions regarding these students. In Section 1111(3)(C) of NCLB the states are required to test limited English proficient students with “assessments in the language and form most likely to yield accurate data on what such students know and can do in academic content areas, until such students have achieved English language proficiency.” The use of tests in a language other than English is permitted in an effort to yield valid and reliable results. (US Congress, No Child Left Behind Act of 2001). A summary guidance document for states recently issued by the U.S. Department of Education specifies: “If native language assessment, testing in the native language, is practicable, and if it is the form of assessment most likely to yield valid results, then a State must utilize such assessments.” Similar to NCLB, Section 34 C.F.R. § 300.532 under IDEA specifies: “State educational agencies shall ensure, at a minimum, that tests and other evaluation material are provided and administered in the child's native language or other mode of communication, unless it is clearly not feasible to do so. And, tests are selected and administered so as best to ensure that when a test is administered to a child with impaired sensory, manual, or speaking skills, the test results accurately reflect the child's aptitude or achievement level or whatever other factors the test purports to measure, rather than reflecting the child's impaired sensory, manual, or speaking skills, except where those skills are the factors that the test purports to measure.” Similar to students with disabilities that are ensured accurate evaluations under IDEA, it is imperative that

LEP students receive the same accurate evaluation when student achievement is measured, and language is not a barrier resulting in inaccurate test results.

Under NCLB, schools are held accountable for all student performance and it is important to be consistent with test administration for both LEP and special education students. In planning for the administration of mandatory standardized tests, it is imperative to be consistent for all students so that NCLB and IDEA are not violated. States and schools must use appropriate accommodations for students with disabilities and LEP students who have a language deficit. If appropriate accommodations are not put into place for these students, student performance on content assessments may not reflect accurate assessment results and be in violation of NCLB and IDEA.

There is an increase in the LEP student population across the United States (Olson & Goldsstein, 1996; Peregoy & Boyle, 2008; Schmid, 2001). Given that Rogers et al., (2006) and Wright and Li (2007) indicated that a high percentage of LEP students are failing assessments based on the linguistic demands of the assessment, there is a great need to review policy that requires these LEP students to be tested in a language that they may not understand. The theory of second language acquisition indicates it takes LEP students five to seven years to acquire and comprehend academic grade-level content (Krashen, 1982; Cummins, 2001). Coupled with the NCLB initiative to close the achievement gap in reading and mathematics, there is a need to explore testing accommodations for LEP students to reduce linguistic difficulties and reduce the achievement gap.

A student's limited English proficiency should not be a barrier when assessing the student's ability or content skills. If the student is unable to demonstrate his or her

abilities due to a lack of English proficiency, then the assessment should be given in the student's native language (Bowles & Stansfield, 2008). NCLB leaves the testing accommodations up to the states. A major segment of the chapter discusses LEP accommodations in terms of LEP student achievement on assessments, including test translation into the student's native language and linguistic modifications of the assessment. Studies indicated LEP students successfully demonstrate their content knowledge when given linguistically modified-English assessments, (Abedi et al., 1998; 2000; Abedi & Lord, 2001). Several studies showed that translation also assisted LEP students demonstrate their content knowledge (Abedi et al., 1998; Robinson, 2010). Accommodations such as native language translation coupled with a modified-English assessment are seldom used to test LEP students, and, to date no studies have examined these accommodations in combination when assessing LEP students.

In addition to the empirical studies reviewed for LEP student accommodations, 14 empirical studies suggested that accommodations given to students with disabilities resulted in a positive effect on student test scores. Students with disabilities successfully demonstrated their content knowledge when they were given computer administration (Calhoon et al., 2000; Russell & Plati, 2000), oral presentation (Bolt & Thurlow, 2007; Elbaum, 2007; Huynh & Barton, 2006; Johnson, 2000;), extended time (Cohen et al., 2005; Eliot & Marquart, 2004; Lewandowski et al., 2008; Zuriff, 2000;), and modified-English (Johnson & Monroe, 2004) test accommodations.

Several important observations are evident from the analysis of the 26 empirical studies included the review of accommodations for LEP students and the 14 empirical studies included the review of accommodations for students with disabilities. Most of the

studies examined the effects of the use of accommodations on test scores. In terms of results, accommodations showed a positive effect on student test scores across studies including administering an assessment in the student's native language, modified-English, computer administration, oral presentation, and extended time. In determining what accommodations should be used for students, the effectiveness and the validity of the accommodation should be reviewed. If an accommodation proves to be effective, the accommodation should improve performance of students with disabilities or LEP students by assisting them to overcome linguistic barriers or deficits. If an accommodation for LEP students or students with disabilities is considered valid, then it should not improve the test score of all students, because it may change the construct that is being measured. An effective and valid accommodation for a particular LEP or special education group of students may not be effective and valid for another group of LEP or special education students. Evidence from the empirical articles reviewed suggests that testing accommodations for LEP and special education students are complicated and there is not a one-size-fits-all approach. Despite the variability in the characteristics of the accommodations from the 40 studies conducted from 2000 to 2010, the observations can provide direction for future research and policy development.

The LEP student assessment accommodation literature would be greatly enhanced by the examination of a modified-English accommodation that is translated into the student's native language and whether these accommodations prove to be effective in relation to LEP performance relative to student achievement. This study contributes to the body of educational literature that focuses on the assessment inequalities present in schools based on the objectivity of empirical science coupled with language acquisition

theory informed by Chomsky, Krashen, and Cummins, respectively. Scholars, researchers, and advocates in support of LEP students have argued that the effort of the policy makers in implementing such policies may be causing more harm than good (Gandara & Baca, 2008; Menken, 2009; Wright & Choi, 2006; Wright & Li, 2007).

In the suburban school district in Virginia, English for Speakers of Other Languages/High Intensity Language Training (ESOL/HILT) students of varying language levels were given a released Virginia SOL assessment and a modified-English, translated version of the Virginia SOL assessment that will be read aloud in English as well as Spanish in an effort to eliminate any language barriers. The difference in the two test scores were examined and analyzed as a means of furthering insight on how to close the achievement gap as well as the importance of providing an equal opportunity for all students to show what academic content they have acquired, eliminating educational inequities in the public education system. The next Chapter will include participants, measures, design, procedures, data analysis, and human participants and ethics precautions.

Chapter 3

This was a quantitative study utilizing a sample from within three elementary schools in a suburban school district in northern Virginia. The methodology was designed to examine the difference in assessment scores to determine if the accommodations of a modified-English, translated assessment would assist varying levels of LEP students. It is recognized that either of the two accommodations could assist the LEP students; however, the accommodation variable will not be controlled for in this study.

Statement of the Research Questions

This experimental research was conducted based on two related theories of accurately determining LEP student content knowledge by providing LEP students with accommodations: translation (Robinson, 2010) and modified-English (Abedi et al., 1998). This study provided both the translation and the modified-English accommodation in order to determine accurately LEP student content knowledge. Specifically, the research was designed to answer the following questions concerning modified-English, translation accommodations provided to LEP students as measured by student achievement:

1. Are there differences in math achievement test scores among third grade LEP students based on a standard mathematics assessment and a modified-English, translated mathematics assessment?

It was hypothesized that math achievement test scores among third grade LEP students would be greater on a modified-English, translated mathematics assessment than on a standard mathematics assessment.

2. Are there differences in math achievement test scores among students based on four levels of language proficiency?

It was hypothesized that there would be differences in math achievement test scores among third grade LEP students based on four levels of language proficiency. LEP 3 & 4 students would score higher than LEP 1 & 2 students on both assessments. LEP 1 & 2 students would score greater gains than LEP 3 & 4 students when given the modified-English, translation accommodation as opposed to the standard mathematics assessment with no accommodations.

Participants

A linguistically diverse suburban school district was chosen for this study. There are 22 elementary schools in the school district and all elementary school principals who had at least 10 LEP students in grade three that had Spanish-speaking LEP students were asked if this experiment could be conducted in their school and were allowed to decide how the logistics would be handled. Grade three was chosen because it is the youngest population to participate in high-stakes testing. Six elementary schools participated and five elementary schools provided the requested data. Data from two Spanish immersion schools where students were instructed in Spanish was excluded from the study. The study only included LEP students that were instructed in English. Furthermore, data collected from LEP 4 & 5 students was excluded because that data was not requested and went beyond the scope of this study. The sample consisted of 82 Spanish-speaking LEP level 1, 2, 3, and 4 students were given a standard mathematics assessment and a modified-English, translated version of the mathematics assessment. The number of

students included for each LEP level is as follows: LEP 1 (16), LEP 2 (24), LEP 3 (23), LEP 4 (19). Currently, the school district provides the Plain-English math accommodation for LEP 1 & 2 students only. This study combined LEP 1 & 2 students and LEP 3 & 4 students.

A statistical power analysis was conducted to determine that the planned experimental design including 82 participants had a sufficient probability of showing statistically significant effects. The analytical method and computer program, G*Power was used to determine the power of the statistical tests used in this study (Erdfelder, E., Faul F., & Buchner A., 1996). For the power analyses values for the sample, alpha, and the expected effect size in the population were chosen. Erdfelder, Faul, and Buchner (1996) determined effect size as, f are .10 = small, .25 = medium, and .40 = large. For a total sample size of $n = 82$ with a medium effect size of .25, $k = 2$ (number of groups), $p = .05$, the power would be .99 which is 99% chance of finding an effect if that effect really exists. The data were pre-existing and the data included 82 people.

The ESOL/HILT students were tested to determine whether the modified-English, translated version of the Virginia SOL assessment had an impact on student achievement among LEP 1 & 2 students and LEP 3 & 4 students.

The school district had a high ESOL/HILT student population. This population of students includes all LEP students receiving ESOL/ HILT services. In the 2009–2010 school year, the school district had 2,695 out of 9,808 students enrolled as ESOL/HILT students. This was 27% of the student population. The elementary LEP student population in the school district was represented by 72 languages and 92 countries.

These LEP students are defined as described in Public Law 107-110, the No Child Left Behind Act (NCLB) of 2001, and classified by the Commonwealth of Virginia as: a.) aged 3 through 21, b.) are enrolled or preparing to enroll in elementary or secondary school, c.) are not born in the United States or whose native language is a language other than English; and who come from an environment where a language other than English is dominant, and d.) whose difficulties speaking, reading, writing, or understanding the English language may be sufficient to deny the individual the ability to meet the State's proficient level of achievement on the State assessments described in section 1111(b)(3) of the NCLB Act; the ability to achieve successfully in the classrooms where the language of instruction is English; or the opportunity to participate fully in society [Title IX, Part A, Sec.901, (25)].

Measures

The two independent variables were the levels of language proficiency and the assessment types, which will be described in this section. The first independent variable is the student's level of language, which has been identified by the World-Class Instructional Design and Assessment (WIDA). Overall score reported on the Assessing Communication and Comprehension in English State to State for English Language Learners (ACCESS for ELLs) will be used. LEP student levels 1 & 2 were grouped together and LEP student levels 3 & 4 were grouped together. LEP 1 & 2 students were grouped together because they currently receive the plain-English math accommodation in Virginia. LEP 3 & 4 students do not receive the plain-English math accommodation. This study was planned to determine if the modified-English, translation would assist

LEP 3 & 4 students as well. Table 2 provides an overview of the WIDA English proficiency levels.

The second independent variable was the type of assessment, which is a released 2001 Virginia math SOL assessment for third grade students as well as a 2001 math assessment for third grade students that has been aligned 2001 Virginia standards and adapted through linguistic simplification by the Arlington County math department. The assessment is written in English and includes Spanish translation. The modified-English version of the assessment was translated by a Bilingual Family Resource Assistant in Arlington County. This translation was done because translation in a student's native language in the state of Virginia does not currently exist. The content area of mathematics was selected because NCLB and the Virginia Department of Education require all students to take the mathematics assessment. Both assessments have the following reporting category descriptions: Computation and Estimation as well as Number and Number Sense. These reporting categories were adapted to linguistically simplified language on the mathematics assessment for the LEP students. The category descriptions were chosen based on language difficulty for the LEP students. A math specialist in Arlington County shared that the Computation and Estimation strand seems to be the most difficult for the LEP students (M. Aguilar, pers. comm., Spring, 2010) and that the Patterns, Functions, and Algebra strand seems to be the easiest part of the assessment to prepare students at the beginning stages of language acquisition (M. Aguilar, pers. comm., February 11, 2011). The Number and Number Sense strand was chosen based on the amount of language that the assessment included.

The dependent variable is the student test score on both assessments. Each test included 13 Number and Number Sense items and 11 Computation and Estimation items. There were 24 test items on both assessments which remained the same as the 2001 Virginia SOL released mathematics assessment and the 2001 modified version of the Virginia SOL mathematics assessment created by the school district.

The principal as well as educators within the building administered the assessments and used the assessment results as a formative measure of student progress. The following information was obtained for analysis after testing: student LEP level, standard assessment score, and modified-English, translated assessment score.

Design

The two independent variables are the levels of language proficiency and the assessment types. The dependent variable is the student test score out of 24 on each of the two assessments. Inferential statistics were utilized to address the research questions. This study utilized a mixed design to determine whether the two independent variables caused variation on the mathematics assessment results. In this factorial experiment the alpha level was set at .05. The assumptions underlying Mixed-Design ANOVA are as follows: (1) the samples are from defined populations; (2) the samples are independent; (3) the dependent variable is normally distributed in the population; (4) the population variances are equal (homogeneity of variance); (5) the condition where the variances of the differences of all combinations of related levels are equal (sphericity).

Procedures

Educators in three elementary schools administered the standard version of the assessment with no accommodations as well as the linguistically modified and translated

version of the assessment that was read aloud once in English and once in Spanish. In an effort to control for order effect, one of the elementary schools administered the assessment with no accommodations first and the assessment with accommodations and translation was administered next. Two of the elementary schools administered modified-English, translation assessment first and the assessment with no accommodations second. The two versions of the mathematics assessment would be a means to gather data based on the effects of the given accommodations.

Each test administrator explained that the purpose of the assessment was to practice for the Virginia SOLs and give proper directions. The native language test administrator translated these directions in Spanish to the Spanish-speaking students. The assessments were untimed. Once students completed the exam, the test administrator collected the testing materials. The assessment results were used as formative assessment and provided the educator with information about content mastered or content to be mastered. The educator recorded each student's LEP level, a standard test score out of 24, and a modified/translated test score out of 24. Once the assessments were completed and the data recorded, the educator provided only the LEP student level and the two test scores. Student's names were not included and the researcher was not able to identify these students in any way. Elementary school names were not included. The data collection was completed by June 2012.

Data collection and timelines are summarized in Table 3.

Data Analysis

The test data representing the two reporting categories was sorted for analysis. This involved combining LEP student levels 1 & 2 for a total of 40 students and

combining LEP student levels 3 & 4 for a total of 42 students on both the standard and the modified-English, translated version of the assessment. LEP 1 & 2 students were grouped together because they currently receive the plain-English math accommodation in Virginia. LEP 3 & 4 students do not receive the plain-English math accommodation. The students were grouped this way to determine if varying LEP levels benefit from the modified-English, translation accommodations. Data were analyzed through the PASW Statistics GradPack 18, and subsequently checked for accuracy.

Human Participants and Ethics Precautions

The administration of the two assessments was voluntary among the diverse suburban school district and the schools and the students are anonymous. However, there are a couple of ethical concerns that were addressed in this research study. This study did not harm or pose a threat to the participating students. Student participants are unknown to me because the data collected was pre-existing data. Data was collected that only included the student LEP level, a standardized test score, and a modified-English, translated test score. The student assessment results were not associated with student names, thus ensuring anonymity.

The exploration of this research topic was aimed at contributing to the body of educational literature focused on LEP student achievement concerning language, high-stakes testing, and accommodation policies. The research findings of this study examined and analyzed test results and accommodations for varying levels of LEP students in an effort to provide insight on how to enable success within the LEP population. In addition, the research findings aim to provide the best instructional and assessment strategies in an

effort to close the achievement gap. The findings of the study and analyses follow in Chapter 4.

Chapter 4

Descriptive Statistics of Study Variables

A two-way mixed design ANOVA was utilized to analyze the interaction between two test scores and two student LEP levels on a mathematics assessment. Results were computed using PASW Statistics GradPack 18. LEP students with a high language level were not included in this study, thereby reducing the sample size to 82. Table 4 summarizes the study variables used in the two-way mixed factorial analysis.

Findings on Statistical Assumptions

The assumptions underlying this mixed design ANOVA were tested in the following order: (1) the samples are comprehensive from defined populations; (2) the samples are independent; (3) there are no outliers in any group; (4) the data for each group are distributed normally in the population; (5) the data for each group have equal variance (homogeneity of variance); (6) the condition where the variances of the differences of all combinations of related levels are equal (sphericity).

In order to detect outliers, PASW Statistics GradPack 18 was used to create box plots and there were no outliers as assessed by inspection of box plots. The data were normally distributed determined by the Shapiro-Wilk Test for Normality. This test was chosen because of the small sample size. LEP student test scores were distributed normally for all group combinations as assessed by Shapiro-Wilk test ($p > .05$). There was homogeneity of variances, as assessed by Levene's Test of Homogeneity of Variance for the standard assessment ($p = .701$) and for the modified, translated assessment ($p = .290$). Mauchly's Test of Sphericity was not met; however, time between testing was a factor.

Findings

In the two-way mixed design ANOVA, two main effects and one interaction were examined for significance. Three values for F and the probability of each were computed. Table 5 shows whether there was an interaction effect.

There was a statistically significant interaction between the student's designated LEP level and the test type with regard to assessment scores, $F(1,104.27) = 39.41, p = .001$. This interaction indicates that students' scores depend on both the students' LEP level and the test type.

Figure 2 is a visual of the mixed design:

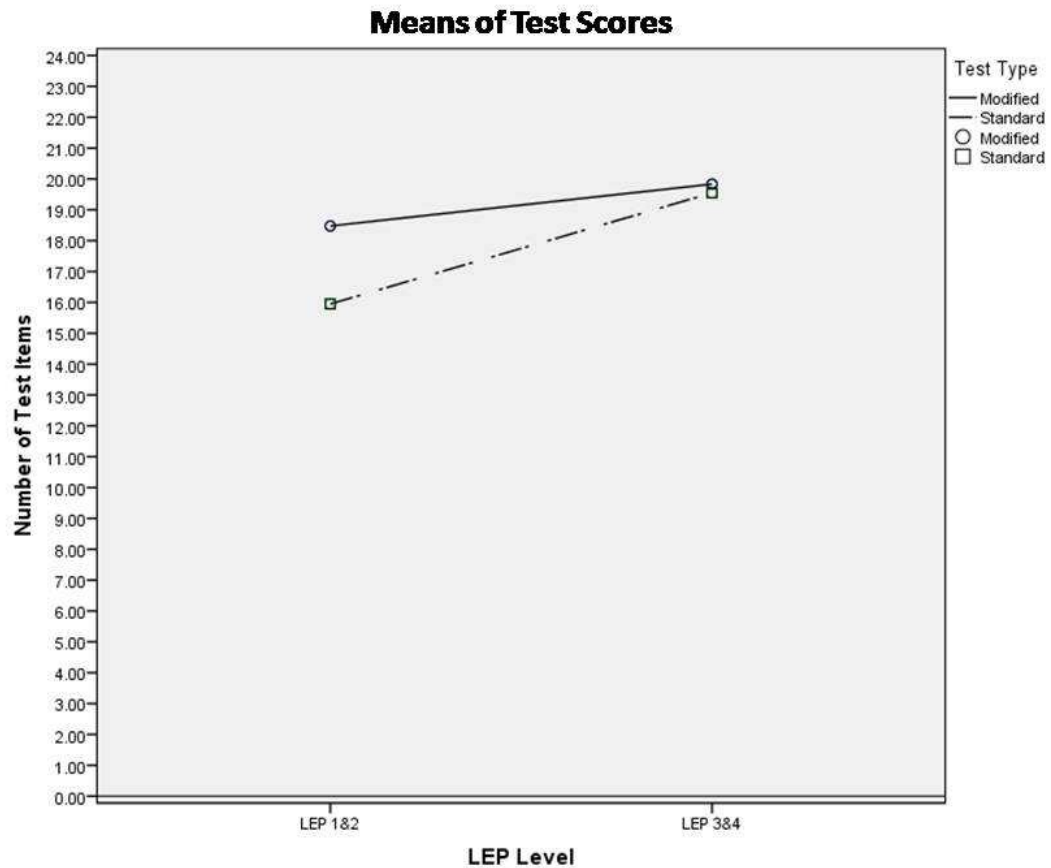


Figure 2. Interaction

Simple main effects for assessment type.

The first research question addressed the differences in math achievement scores among third grade LEP students based on test type. The two test types were the standard mathematics assessment and the modified, translated mathematics assessment. A statistically significant difference was found in student test scores between the standard test and the modified, translated test administered to LEP 1 & 2 students, $F(1,160) = 22.566, p = .001$. LEP 1 & 2 students who took the modified, translated version of the assessment had a statistically greater test score ($M = 2.53, SE = .53$) than LEP 1 & 2 students who took the standard version $F(1,160) = 22.566, p = .001$. There was no statistically significant difference in student test scores between the standard and modified, translated test administered to LEP 3 & 4 students, $F(1,160) = .303, p = .583$. This finding suggests that the modified, translated assessment did not improve LEP 3 & 4 students test scores. Table 6 summarizes the significance between LEP student levels and test type administered.

The second research question addressed the differences in math achievement scores among third grade LEP students based on four levels of language proficiency. A statistically significant difference was found in student test scores between LEP 1 & 2 students and LEP 3 & 4 students who were given the standard version of the assessment, $F(1,160) = 46.927, p = .001$. LEP 3 & 4 students who took the standard assessment had a statistically greater test score ($M = 3.598, SE = .525$), $p = .001$.

A statistically significant difference in student test scores was also found between LEP 1 & 2 students and LEP 3 & 4 students who were given the modified, translated version of the assessment, $F(1,160) = 6.690, p = .011$. LEP 3 & 4 students who took the

modified, translated assessment had statistically greater test scores ($M = -1.358$, $SE = .525$), $p = .011$). Overall, LEP 3 & 4 students scored higher on both assessments.

Summary

The statistical description of the data set shows that the variables mostly have little variability of distribution around the mean. This indicates that spread of both the scores and measures in the distributions are minimal, and suggests that the sample statistics generated through inferential procedures are distributed normally (Hinkle, Wiersma & Jurs, 2003).

A two-way mixed factorial design was utilized (assessment type/designated student LEP level) consisting of a 2 x 2 (LEP levels 1 & 2 and LEP levels 3 & 4) (standard mathematics assessment and a modified, translated mathematics assessment) mixed design. The results show a significant main effect for test type given to LEP 1 & 2 students, $F(1,160) = 22.566$, $p = .001$, partial $\eta^2 = .124$. This suggests that mean assessment score is different for the standard assessment compared to the modified, translated assessment. The results also show a significant main effect for LEP students given the standard version of the assessment, $F(1,160) = 46.927$, $p = .001$, partial $\eta^2 = .227$. These results suggest a difference in the mean assessment scores for the standard version of the assessment. Furthermore, the results indicate a significant main effect for LEP students given the modified, translated version of the assessment, $F(1,160) = 6.690$, $p = .011$, partial $\eta^2 = .040$. These results indicate that there is a difference in the mean scores of the LEP students who took the modified, translated version of the assessment.

LEP 1 & 2 students scored significantly better with the modified, translated assessment. LEP 3 & 4 students scored slightly better with the modified, translated

assessment. The interaction between student's designated LEP level and the type of assessment was significant, $F(1,104.27) = 39.41, p = .001$. The interaction effect suggests that LEP student's scores depend on both student LEP level and the test type administered to predict test score.

Chapter 5

Overview

This study sought accommodations for limited English proficient (LEP) students, modified-English, translation, that provides additional linguistic support when taking an assessment. NCLB's intent is to assess every student in a language and test form that facilitates accurate understanding of what the students know and can do. NCLB also allows each state to make the decision on how to assess students. There is variance on the determination of appropriate accommodations at the state level. Most states provide accommodations such as extended time, breaks, modified-English, and the use of bilingual dictionaries. Few states provide students the accommodation of testing a student in his/her native language. The LEP student population entering American schools is on the increase, while remaining the lowest achieving population academically. Reducing the linguistic complexity of assessments is in response to NCLB, which stresses the inclusion of LEP students in testing situations while closing the achievement gap.

Grade 3 LEP students were given two assessments with 24 mathematics items. One assessment was standard with no accommodations. The second assessment students were provided with modified-English, translation accommodations. The results indicate that the modified, translated assessment seems to be superior to the standard assessment. The results also indicate LEP 3 & 4 students seem to have higher overall assessment scores on both assessments. In addition, LEP 3 & 4 students scored about the same regardless of the test type administered. To the contrary, for LEP 1 & 2 students, the modified, translated assessment was superior to the standard assessment. These findings have implications for testing accommodation requirements and for further research.

Summary of Results

The results of the study are recapped here by restating the research questions that guide this study followed by the research findings.

Research question 1: Are there differences in math achievement test scores among third grade LEP students based on a standard mathematics assessment and a modified-English, translated mathematics assessment?

The results indicate that LEP students at all designated language levels scored higher on the modified-English, translated version of the mathematics assessment than on the standard assessment. LEP 1 & 2 students scored significantly higher on the modified-English, translated assessment. LEP 3 & 4 students scored only slightly higher on the modified-English, translated version of the assessment. LEP 3 & 4 students scored about the same regardless of the test type administered, indicating that test type does not influence test scores for these students.

Research question 2: Are there differences in math achievement test scores among third grade LEP students based on four levels of language proficiency?

Overall, LEP 1 & 2 students scored lower on both assessments compared to LEP 3 & 4 students. LEP 1 & 2 students scored significantly lower on the standard version of the mathematics assessment than LEP 3 & 4 students. In addition, LEP 1 & 2 students scored lower on the modified-English, translated version of the assessment compared to LEP student levels 3 & 4. To the contrary, the achievement gap between LEP 1 & 2 students and LEP 3 & 4 students on the modified-English, translated version of the assessment was not as great as on the standard assessment.

Discussion

For research question 1, the results suggest that all LEP students scored better on the modified-English, translated version of the assessment. LEP students who are beginning to acquire the English language (designated LEP 1 & 2) scored significantly better when they were provided with an assessment that was linguistically modified and translated into their native language. The findings support previous research, as noted in Chapter 2, that Spanish-speaking students performed significantly better on mathematics assessments when tested in Spanish rather than in English in both kindergarten and first grade (Robinson, 2010). The findings also support previous research, as noted in Chapter 2, that language modification offered to LEP students and English proficient students resulted in improved mathematics performance of 49% on items that were modified linguistically for the students (Abedi, Hofstetter, and Lord, 1998).

The results also underscore previous research in which LEP students successfully demonstrated their content knowledge when given linguistically modified English assessments (Abedi et al., 1998, 2000; Abedi & Lord, 2001). Previous research also showed LEP students demonstrate their content knowledge when given assessment translation (Abedi et al., 1998; Robinson, 2010). This is particularly true for LEP 1 & 2 students, who are just beginning to acquire the English language.

Students with LEP levels 3 & 4 scored about the same regardless of the test type administered. The findings support previous research on accommodations for all learners, as noted in Chapter 2, that if all accommodations helped English learners, there was no significant difference for English-proficient students between test formats, suggesting that accommodation strategies did not affect the construct (Abedi et al., 2000).

Regardless of the student's LEP level, as students acquire the English language, the results between groups taking the modified-English, translated version of the assessment should not indicate a large significant difference. If in fact students with designated high LEP levels or English-proficient students showed a large significant difference in scores between the modified-English, translated and standard assessment, then the accommodation would not be suitable for students with lower LEP levels. The achievement gap would still be present and the modified, translated version of the assessment would be considered ineffective.

Research question 2 inquires whether the student achievement is based on language proficiency and, if so, which designated language proficiency level achieves greater gains. Overall, LEP 1 & 2 students scored lower on both assessments compared to LEP 3 & 4 students. LEP 1 & 2 students scored significantly lower on the standard version of the mathematics assessment than LEP 3 & 4 students. However, the achievement gap between LEP 1 & 2 students and LEP 3 & 4 students on the modified-English, translated version of the assessment was not as great as on the standard assessment. Students who were just beginning to acquire the language proved not to do as well on the assessments as the students who have had more exposure to the language. The findings from this study are consistent with theory, as noted in Chapter 2, which emphasizes that language acquisition develops in stages.

Language acquisition was defined by BICS, the interpersonal skills that everyone acquires in their first language regardless of IQ or academic aptitude, and by CALP, the dimension of language proficiency that relates to literacy skills and is required to manipulate or reflect upon language in academic situations. CALP takes approximately

five to seven years to acquire. It is believed that language minority students develop BICS more rapidly and then are assumed to have sufficient English language proficiency to excel in classrooms instructed in English as well as take assessments that are administered in English (Cummins, 2001c). Previous empirical evidence, as noted in Chapter 2, highlighted that LEP students did not pass standardized tests that were administered in a language they did not understand (Cummins, 1980; Rogers et al., 2006; Wright & Li, 2007).

The empirical data presented in this study coupled with earlier studies appear to validate the language acquisition theory that it takes five to seven years to learn academic content in a second language (Chomsky, 1965; Krashen, 1982; Cummins, 2001). Furthermore, past theory and empirical evidence suggest that assessments that are administered in English are cognitively demanding for the LEP students.

In sum, all LEP students performed better on the modified-English, translated version of the mathematics assessment. Nevertheless, LEP 1 & 2 students scored significantly better on the modified-English, translated version of the assessment.

Limitations

Although this study advances the understanding of the modified, translated accommodation to varying language levels of LEP students, it also has some limitations. First, a small sample size from three elementary schools in a suburban school district in Virginia was included in this study. LEP 1 & 2 students were examined as a single group because currently these students receive the modified-English accommodation, also known as plain English math, on the state assessment. LEP 3 & 4 students do not receive the plain English math accommodation. As a result, for students of specific LEP levels, it

could not be determined whether specifically one level or a combination of the two levels of LEP students made the difference or whether the combined LEP levels made the difference. Second, the modified-English, translated mathematics assessment provided LEP students with two linguistic accommodations. These accommodations were not studied in isolation. Consequently, for students receiving combined accommodations, it could not be determined whether specifically just one or both accommodations made the difference or whether the combined accommodations interacted in such a way as to remove the language barriers from performance. Furthermore, only mathematics was targeted, thus the researcher could not determine whether the accommodations have a different impact in other subject areas.

Conclusions

This study was based on two related theories of accurately determining LEP student content knowledge by providing LEP students with accommodations: translation (Robinson, 2010) and modified-English (Abedi et al., 1998). The two overlapping theories of Robinson, who suggests that native translation is beneficial to LEP students, and Abedi et al., who suggest that modified-English assists LEP students to show what they know and can do on content assessments, affected how the current study was conducted. This study provided both the translation and the modified-English accommodation in order to determine accurately LEP student content knowledge.

Evidence from a review of empirical research strongly suggests using a case-by-case approach to determine test accommodations for special education and LEP students. The effectiveness and validity of the accommodations depend on the background of the students for whom the accommodations are used. The level of English proficiency differs

among LEP students. The statistically significant results in this study indicate that LEP 1 & 2 students scored significantly higher on the modified-English, translated assessment. LEP 3 & 4 students scored only slightly higher on the modified-English, translated version of the assessment. LEP 3 & 4 students scored about the same regardless of the test type administered. The findings of this study suggest that LEP 1 & 2 students, who are just beginning to acquire the English language, may not understand English vocabulary and the structures of an assessment, and therefore benefit from a modified-English, translated version of an assessment. In contrast, the findings of this study suggest that LEP 3 & 4 students, who are developing and expanding their language acquisition, may understand English vocabulary and the structures of the assessment, and therefore do not benefit from a modified-English, translated version of an assessment. The results from this study indicate that there is an existing achievement gap between LEP students beginning to acquire the English language and LEP students that are developing and expanding language acquisition.

The findings of this study highlight the ramifications for individual LEP students and schools with large numbers of LEP students. The LEP subgroup deserves special attention for two reasons. First, LEP students are one of the fastest growing subgroups in the country. These students are at a disadvantage compared to students in other subgroups because by definition they are considered to have limited proficiency in English, the language of nearly all standardized tests. NCLB requires that LEP students' standardized test scores be used for accountability purposes regardless of language or accuracy problems. There are serious ramifications for both the LEP student and the schools with large numbers of LEP students.

The United States Department of Education granted state waivers from certain requirements of the Elementary and Secondary Education Act of 1965 (ESEA), as amended by the No Child Left Behind Act of 2001 (NCLB). Although schools are no longer faced with achieving Adequate Yearly Progress (AYP) under the federal education law, the schools still must meet annual measurable objectives (AMOs). In the state of Virginia low-performing schools will be identified as “priority” and “focus” schools and recognize high-performing schools as “reward” schools. Schools that are labeled as priority or focus schools will focus on school improvement and reform. Furthermore, 40 percent of teacher and principal evaluations will be aligned directly with student achievement. Schools with large numbers of LEP students will most likely be labeled as the priority and focus schools. Teachers and principals with large numbers of LEP students may be evaluated in a substandard manner due to lower student achievement.

More importantly, the ramifications for the individual LEP students could be life altering. LEP students who fail or do poorly on the mandated high-stakes test could be placed in low-ability instructional groups with inferior curriculum and instruction, retained in their current grade level, and unable to receive a high-school diploma. The LEP students who do not receive a high school diploma are unable to receive further education and typically receive 30 percent less life time earnings than students who receive a high school diploma and continue on for additional education. All circumstances lead to the LEP student developing a lower self-esteem.

The overall goal is for students to develop proficiency in English, and schools need to provide all students with different opportunities to immerse themselves into the language through curriculum, instruction, and assessment. However, for assessments

such as mathematics, science, social studies, and history, it is reasonable to minimize irrelevant linguistic complexity when assessing content skills that are the primary constructs being measured. It is imperative that when assessments are administered to a child that has a language deficit or a disability, the assessment results accurately reflect the child's aptitude or achievement level or whatever other factors the test purports to measure, rather than reflecting the child's language or disability deficit, resulting in inaccurate results.

Under NCLB, schools are held accountable for all student performance and it is important to be consistent with test administration for both LEP and special education students. In planning for the administration of mandatory standardized tests, it is imperative to be consistent for all students so that NCLB and IDEA are not violated. States and schools must use appropriate accommodations for students with disabilities and LEP students who have a language deficit. If appropriate accommodations are not put into place for these students, student performance on content assessments may not reflect actual knowledge and may be in violation of NCLB and IDEA.

Recommendations

The analytical findings of this study have implications for policy and research. In terms of policy, NCLB should ensure implementation of its current requirement that states are mandated to test LEP students with "assessments in the language and form most likely to yield accurate data on what such students know and can do in academic content areas, until such students have achieved English language proficiency." States should have access to tests in languages other than English, or have the means to obtain such assessments in an effort to yield valid and reliable results. The decision to use an

assessment in the student's native language should be made on a case-by-case basis and should be determined by educators within the schools who know the student's deficits and can determine the best way in which to assess students. This decision should not be made in an overall blanket statement by the state that testing a student in his/her native language is not feasible due to the cost of translation. A cost-benefit analysis should be conducted to compare the advantages and feasibility of a modified-English, translated version of assessments. This strategy may prove to be more expensive than other accommodations. Although such an investment is vital not only because NCLB has further deepened federal involvement in public school education, but also because NCLB is committed to closing the achievement gap, the use of modified-English, translated assessment accommodations presents a need for the states to at least provide this as an option for schools.

Student LEP levels are combined in this study. Future research should build on the analytical approach of this study to test the same hypotheses; however, tests should be administered to a larger sample of LEP students. Test scores should be analyzed according to one LEP level to determine specifically the students with designated LEP levels that benefit from the modified-English translation accommodation.

Modified-English and translation are two forms of accommodations and are combined in this study. Future research should also build on the analytical approach of this study to test the same hypotheses but, this time, provide the students with one accommodation in isolation at a time. The students may be tested with only a modified-English version of an assessment, or the LEP students may be tested with only the translation accommodation. Providing an accommodation to students in isolation, then

comparing the results of the combined accommodations could assist in the determination of the effectiveness of accommodations in isolation or combined.

Future studies also should seek to explore the effectiveness and validity of accommodations for various student background variables within the LEP population. Student background variables may be indicators of how well the students are prepared for assessments. Student background information, such as the language proficiency level, the language spoken at home, length of time living in the United States, and the number of years the student was taught in English, should be considered when determining appropriate accommodations.

Last, the research base on student test accommodations should be expanded to test and confirm the limited results reported in this study. The empirical research on accommodations for LEP students in content areas is insufficient. Educators should be able to rely on empirical evidence in order to guide their decisions on the use of accommodations. All assessments in all subject areas should be developed and tested empirically to provide effectiveness and validity and to ensure equity in testing situations for all students.

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Appendix A

Definition of Key Terms

Definitions and terminology were defined by the Virginia Department of Education (www.doe.virginia.gov, 2011):

Accommodation — a change in an assessment to provide a fair opportunity for students to demonstrate what they know and can do, without giving them an advantage over other students.

In Virginia, examples of accommodations could be (www.doe.virginia.gov/testing, 2012):

Direct linguistic accommodations for LEP students on the SOL assessments:

- Read-aloud or audio (except on the reading assessment)
- Bilingual dictionary
- English dictionary
- Dictation in English to a scribe
- Plain English math

Indirect linguistic accommodations available to LEP students on the SOL assessments:

- Flexible schedule
- Template to show one item at a time on a paper/pencil test (Visual Aid)
- Mark in test booklet or respond verbally

Alignment — effort to ensure that what teachers teach is in accord with what the curriculum says will be taught and what is assessed on official tests.

Assessment — method of measuring the learning and performance of students; examples include achievement tests, minimum competency tests, developmental screening tests, aptitude tests, observation instruments, performance tasks, etc.

English-language learners (ELL) — a student whose first language is other than English and who is in a special program for learning English.

Limited-English proficient (LEP) —see English-language learners

Proficient — test results indicating that the student demonstrated the skills and knowledge outlined in the Standards of Learning (SOL).

Sampling — a way of estimating how a whole group would perform on a test by testing representative members of the group or giving different portions of the test to various subgroups.

Special education (SPED) — a service especially designed and at no cost to the parent/guardian that adapts the curriculum, materials, or instruction for students identified as having educational or physical disabilities and tailored to each student's needs and learning style and provided in a general education or special education classroom, home, hospital, separate school, or other setting.

Standardized testing — tests administered and scored under uniform (standardized) conditions. Because most machine-scored, multiple-choice tests are standardized, the term is sometimes used to refer to such tests, but other tests may also be standardized.

Standards of Learning (SOL) — the minimum grade level and subject matter educational objectives, described as the knowledge and skills "necessary for success in

school and for preparation for life,” that students are expected to meet in Virginia public schools and specified by the Standards of Quality (SOQ).

Virginia assessment program — means a system used to evaluate student achievement that includes SOL tests and additional tests that may be approved from time to time by the Board of Education.

Additional key terms not derived from the Virginia Department of Education include:

Modified-English — linguistic simplification on assessments can make the assessment understandable for students allowing them to demonstrate their knowledge of the content (Cummins, 2001).

Native language translation - (hereafter “translation”) — an equivalent word or phrase in one language used in another language (Abedi et al., 2004).

Appendix B

Table 1. Overview of Exemptions from SOL Assessments Available to LEP Students

Content Area	Available Exemptions on SOL Assessments*
Reading	LEP students who have attended school in the United States for less than 12 months may receive a one-time exemption for the SOL Reading test in grades 3 through 8.
Mathematics	LEP students may NOT be exempted from the SOL Mathematics tests.
Science	Under the requirements of NCLB, all students, including LEP students, are required to participate in Science tests once at the elementary school level, once at the middle school level, and once at the high school level. However, LEP students in Virginia may be exempt from the grade 3 SOL Science test but must take the grade 5 SOL Science test. No other exemptions for the SOL Science tests are available to LEP students.
History/Social Science and Writing	Under the <i>Regulations Establishing Standards for Accrediting Public Schools in Virginia</i> , 8 VAC20-131-30.G, LEP students in grades 3 through 8 may exercise a one-time exemption from the SOL History and Social Science test and from the SOL Writing test (grade 5 or 8 only). No other exemptions for the SOL History and Social Science and Writing tests are available to LEP students.

*Retrieved from: http://www.doe.virginia.gov/testing/participation/lep_guidelines.pdf
February 2, 2012.

Table 2. Overview of WIDA English Language Proficiency Levels

WIDA Level	Description
1-Entering	LEP Receiving Services, WIDA First Level-Entering
2-Beginning	LEP Receiving Services, WIDA Second Level-Beginning
3- Developing	LEP Receiving Services, WIDA Third Level-Developing
4-Expanding	LEP Receiving Services, WIDA Fourth Level-Expanding
5-Bridging	Bridging-First Year (First Year After Exiting ESOL/HILT/HILTEX)
5-Bridging	Bridging-Second Year (Second Year After Exiting ESOL/HILT/HILTEX)
6-Reaching	Reaching-First Year (Third Year After Exiting ESOL/HILT/HILTEX)
6-Reaching	Reaching-Second Year (Fourth Year After Exiting ESOL/HILT/HILTEX)

LEP Codes from Virginia Department of Education, Division of Technology, Office of Educational Information Management, Student Record Collection 2009-2010, Codes & Definitions.

(http://www.doe.virginia.gov/testing/participation/lep_guidelines, Retrieved July 30, 2010).

Table 3. Data Collection Timeline and Activities

Date	Activity
February 18 & 19, 2011	E-mailed elementary principals in Arlington County that had third grade Spanish speaking LEP students attending their school to describe the assessments, and to determine if they were interested in participating in the study.
March 25, 2011	Submitted application packet to Arlington County to obtain permission for the testing to take place within the elementary schools.
Throughout May & June 2011	Met with elementary principals that responded to my e-mail and explained my study and the assessments that were intended to be administered to the LEP students.
June & July 2011	Assessments administered to the schools that agreed to administer the assessments to their third grade LEP students.
July 2011	Sent thank-you letters to the schools that administered the assessments.
June 2012	Collected test score data

Table 4. Descriptive Statistics of the Study Variables¹

	Test Type		Means
	Modified, Translated	Standard	
LEP levels 1 & 2	<i>M</i> = 18.47 (2.46)	<i>M</i> = 15.95 (2.65)	17.21 (2.84)
LEP levels 3 & 4	<i>M</i> = 19.83 (2.04)	<i>M</i> = 19.55 (2.34)	19.69 (2.18)
Means	<i>M</i> = 19.17 (2.34)	<i>M</i> = 17.79 (3.07)	
			Total 18.48 (2.81)

¹Standard deviations are listed beside the means. The total score on both assessments is 24. All variables show little variability of distribution around the mean.

Table 5. Tests of Within-Subjects and Between-Subjects

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Within Subjects					
Test Type	80.92	1	80.92	62.08	.001
Interaction (Test x LEP level)	51.36	1	51.36	39.41	.001
Between Subjects					
LEP level	251.60	1	251.6	25.16	.001

Table 6. Pairwise Comparisons

LEP Level	(I)Test Type	(J)Test Type	Mean Difference	Std. Error	Sig.	95% Confidence Interval for Difference		Cohen's <i>d</i>
						Lower Bound	Upper Bound	
LEP 1 & 2	Standard	Modified	-2.525	.532	.001	-3.575	-1.475	.89
	Modified	Standard	2.525	.532	.001	1.475	3.575	
LEP 3 & 4	Standard	Modified	-.286	.519	.583	-1.310	.739	.09
	Modified	Standard	.286	.519	.583	-.739	1.310	