English Proficiency as a Predictor of ACT Scores:

A Predictive Correlational Study

Kimberly Hensley Nye

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

Liberty University

2021

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2021

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ABSTRACT

English Language Learners (ELLs) compose the fastest growing population in United States public schools. Lack of English language proficiency for these students has created a significant problem with assessment, particularly related to high-stakes accountability requirements. Identification of relationships between language proficiency and high-stakes test scores would benefit both the student and the school system. This archival, predictive correlational study examines if a relationship exists between English proficiency as measured by ACCESS for ELLs reading scores and American College Tests (ACT) composite and subscores in reading and mathematics. The population for this study included 11th grade English Language Learners in a medium-sized school system in North Carolina during four consecutive school years, 2014-2018. This study found ACCESS for ELLs reading scaled scores to be a statistically significant, albeit weak, predictor of ACT composite scores and mathematics sub scores. More research is needed to investigate the myriad of factors that influence an ELL's achievement on high-stakes tests like the ACT.

Keywords: English Language Learners, ACT, ACCESS for ELLs, Language Proficiency

Copyright Page

Dedication

This work is dedicated to my grandchildren: Jeremiah, Blakely, Skylar, Avaleigh, Reagan, Gabriel, Olivia, Asa, Ella, Clara, Brooklyn, and the ones who are still in the mind of God. This has been a long, exciting, but often challenging, almost six years. This work was accomplished while being a wife, a mother, a Mim, teaching full time, and serving in the local church. It was accomplished during the joyous times of celebration of many of your births! It was accomplished despite surgeries, illnesses, transitions, and a global pandemic. I hope that you learn from your Mim that determination and perseverance are qualities that the Lord seeks to develop in you. He has given each one of you gifts and abilities to serve Him. He has equipped you, so seek Him and patiently cultivate those gifts. I also hope that you learn from the example your Pop Pop, your Nana and Papaw, and the rest of our family displayed through this degree process. Our family is unique, blended and abundantly blessed! Learn that people who love one another sacrifice for, serve, and encourage each other. There would be no way I could have completed this journey without their love and support. So sweet grands, "…whatever is true, whatever is noble, whatever is right, whatever is pure, whatever is lovely, whatever is admirable—if anything is excellent or praiseworthy—think about such things. Whatever you have learned or received or heard from me, or seen in me—put it into practice. And the God of peace will be with you." ~ Philippians 4:8-9 (NIV)

Acknowledgments

There are so many people I wish to thank for their help, encouragement, and support throughout this six-year doctoral journey. First, I would like to thank my colleagues who have been instrumental in the completion of this degree. Our amazing testing coordinators, Mrs. Linda Moose and Mrs. Laura Woodruff, thank you for your willingness to search for and provide information on the ACT and its administration. More importantly, thank you for all your kind words of encouragement, you will never know just how much they meant to me. Mrs. Holly Ellwanger, thank you for sharing your expertise with English Language Learners; we miss you at Saint, but we know you are doing amazing work at LR. Ms. Toni Burke, Mrs. Jean Bailey, and Mrs. Amanda Griffin, thank you for your editing assistance; you know this math teacher really needed the help. District staff member, Dr. Brad Arrowood, thank you for all your assistance in the process of acquiring data. Mrs. Windy Barham, thank you for your assistance with data analysis, but more importantly, thank you for being my friend and sister in Christ. Mrs. Judy Stewart and Mrs. Debbie Hedrick, thank you for moving seemingly insurmountable roadblocks with my data. Debbie, you have been my best friend for almost 30 years…I could not have endured this journey without you. Mr. Scottie Houston and Mr. Kyle Stocks, my fearless administrators, thank you so much for being flexible with me throughout this process. And last but certainly not least, my math department buddies; each of you are amazing! Thank you for your thoughts, prayers, kindness, and friendship through this process. I love you all.

I would also like to thank my church family. So many of your have been truly interested in this journey. You have rejoiced with me in victories and cried with me during struggles. You have asked me about ‘what comes next’ and how you could best pray for me.

But more important than the asking, was the actual action of prayer. You have faithfully lifted me before the Lord, and I cannot thank you enough. Pastor Bill Sturm, thank you for being faithful to preach the Word. The Lord used one of your recent sermons from Exodus to convict my heart and push me through the last stages of this process. Also, thank you for keeping me on that prayer list of yours…you can check one off. Dr. Walter Creighton and Mrs. Sue, I love you both so much. Thank you for the interviews and helping to keep me motivated. But most importantly, thank you for being examples of awesome, godly educators.

Finishing this process would not have been possible without the unwavering support of my incredible family. To my husband Keith, you have been my rock, my superman, my safe place, my encourager, my motivator, and my very best friend. Thank you for the gentle push to begin this journey…I love you. To my parents, you are both such blessings to everyone who know you. You have always been my biggest fans. Thank you for all your love and your support in everything I have ever undertaken. To my children, you inspire me! Never stop learning, no matter how old you get. Thank you for your love and patience throughout these last six years.

Finally, but most importantly, I want to thank the Lord for His work in my life during this journey. He has stretched me beyond what I thought I was capable of and equipped me to accomplish the tasks set before me. “All I have needed Your hand hath provided. Great is Thy faithfulness, Lord unto me.” ~ Thomas O. Chisholm

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List of Abbreviations

Assessing Comprehension and Communication in English State-to-State (ACCESS)

American College Test (ACT)

College and Career Readiness Standards (CCR)

Common Core State Standards (CCSS)

English Language Learners (ELL)

English Learner (EL)

English as a Second Language (ESL)

Limited English Proficient (LEP)

The World-Class Instructional Design and Assessment Consortium (WIDA)

CHAPTER ONE: INTRODUCTION

Overview

Chapter one provides a historical overview and introduction to English Language Learners. It will discuss issues surrounding English proficiency. Additionally, chapter one examines English proficiency as it relates to high-stakes testing and how an English learner's proficiency impacts performance. This chapter will discuss the problem, purpose, and rationale for the study, along with the research questions and related definitions.

Background

The United States holds English as its official language. The reality is however, the United States is a nation of multiple languages. Each speaker has varying proficiencies in their first language as well as English. This variance is present in all aspects of society: the workplace, social matrix, and in the nation's schools. Students who declare a language other than English are considered English Language Learners (ELLs). ELLs compose approximately one-tenth (4.6 million students) of the United States public-school population and are the fastest growing segment of students (National Center for Education Statistics, 2017; National Council of Teachers of English, 2008). They are a diverse and complex group bringing to the schoolhouse differing language proficiencies, socio-economic class, cultural views, and content knowledge (National Council of Teachers of English, 2008). They often struggle academically. The National Council of Teachers of English (2008) reported that non-native English speakers, ages 14-18, were 21% less likely to complete high school than their native English-speaking peers. Staggering statistics such as these compel a closer look at if there is a relationship between English proficiency and assessment through high-stakes testing.

Historical Context

English as a second language instruction dates to colonial time in the United States. The scope of such instruction has varied, but the primary focus has been steadfast until about 50 years ago: to learn English, to understand the Constitution, to understand the role and processes of government, and assimilate into the American lifestyle (Cavanaugh, 1996). In the 1960s legislation was enacted and professional organizations, such as Teachers of English to Speakers of Other Languages (TESOL), were established. Several key events ushered in a time of educational reflection and reform for bilingual education (Nieto, 2009; San Miguel, 2013). In the early 1960s, the influx of Cuban immigrants with a desire for their children to retain their language and culture advocated for highly successful, locally funded bilingual education programs in Florida. This initiative was closely followed by the Bilingual Education Act (1968) which provided funds in the form of competitive grants to encourage the development of innovative programs for students with limited English proficiency. Educational reform for bilingual students was further strengthened by cases such as *Lau et al. v. Nichols et al.* (1974) which required states receiving federal monies to provide equal education to non-English speaking students. Following the enactment of No Child Left Behind (2001), the U.S. Department of Education established a grant to promote academic language development and achievement for ELL students (Board of Regents of the University of Wisconsin System, 2014). The World-Class Instructional Design and Assessment Consortium, known as WIDA, was one program initiated as a result of the grant. Named after the three initial states involved, Wisconsin, Delaware, and Arkansas, WIDA “advances academic language development and academic achievement for children and youth who are culturally and linguistically diverse through high

quality standards, assessments, research and professional learning for educators" (Board of Regents of the University of Wisconsin System, 2018, para 5).

In 2009, the development of College and Career Readiness Standards began under the direction of governors, state commissioners of education, and other state leaders of 48 states (Common Core State Standards Initiative, 2018). These standards were "informed by the best state standards already in existence, the experience of teachers, content experts, states, and leading thinkers, and feedback from the public" (Common Core State Standards Initiative, 2018, para 10). College and Career Readiness Standards are anchored in research, aligned with college and work experiences, based on rigorous content and application of knowledge, built upon state standards already in existence, and informed by top performing countries around the world (Common Core State Standards Initative, 2018).

Social Context

No Child Left Behind (NCLB) ushered in the era of test-based accountability and requires that all students, including ELLs, make appropriate annual progress both in English proficiency and academic content (Menken, 2010). To assist in academic growth and English proficiency, students identified as ELL participate in some type of language program to aid their academic success. Participation in these types of programs has been shown to have a direct relationship with improved educational outcomes, graduation rate, and postsecondary enrollment (National Center for Educational Statistics, 2017). NCLB policy assumed ELLs can attain English proficiency in as little as three years. However, the majority of research indicates that these students need as many as 11 years to attain English proficiency levels that are adequate in meeting academic standards (Alexander, 2017). Most high-stakes assessments are administered in English and are linguistically complex. Menken (2010) posits, "Testing research is conclusive

that a content area tests administered to an ELL in English are unlikely to render a true portrait of what the student knows and is able to do because language impacts the results" (p. 123).

The high school English Language Learner is especially susceptible to adverse consequences of failing high-stakes testing. High school exit exams are designed for the native English-speaking student who has received 10 years of education in the public school classroom (Alexander, 2017). Even though testing accommodations are often provided, they frequently are not enough to mitigate the gap. Lower graduation rates and higher dropout rates of ELLs reflect the negative impact of such high-stakes assessments (Alexander, 2017; McKeon, 2005; Menken, et. al, 2014). One study conducted in Wisconsin in 2016 did offer an optimistic indicator. It suggested that the reclassification of ELLs as fully English proficient at the end of 10th grade had a positive impact on both the ACT composite score and enrollment in post-secondary programs (Carlson & Knowles, 2016). The potential positive impact of exiting ELL programs indicates the need for development of innovative successful programs to move ELLs as quickly as possible toward English proficiency.

The American College Test (ACT) is one of the most popular college readiness assessments in the United States. It is based on the College and Career Readiness Standards (2009) and is designed for high school students in grades 11 or 12. Results from this assessment assist the student in making plans for what happens after high school. They also assist postsecondary institutions in meeting student needs and assessing potential success in college (ACT, 2017). Twenty-five states require students to take the SAT or the ACT, and 12 of these states, including North Carolina, require the ACT as part of their federal accountability protocol (Gewertz, 2017).

North Carolina requires that 95% of all high school juniors, including English Language Learners (ELLs) who are in their first year in U.S. schools, to take the ACT (North Carolina Department of Public Instruction, 2016). The number of students scoring a minimum composite score of 17, as required for admittance by the 15 University of North Carolina System universities, is reported as part of the school report card evaluating each district and school statewide. In recent years, North Carolina has placed increased emphasis on the ACT for rising seniors. Legislation was introduced in 2015 that requires students who do not meet the minimum composite score of 17 to take remedial coursework in mathematics and English. Although the rollout of this legislation has been slow, the initial phase of the program began with 18 schools in 2018 (Bonner, 2017). The ACT itself is not necessarily considered a high-stakes assessment. However, given the mandates and emphasis placed on minimum composite scores, the ACT has become high stakes for North Carolina educational stakeholders.

Study

This study used Assessing Comprehension and Communication in English State-to-State for English Language Learners (ACCESS for ELLs®) testing to further the research on high stakes test results for ELLs. K-12 classrooms throughout the United States administer ACCESS for ELLs annually to English Language Learners (ELLs). Developed by WIDA, this high-stakes, standards-based, criterion-referenced test assesses English proficiency over four domains: reading, speaking, listening, and writing and is written in a manner that is sensitive to the language needs of ELLs (Fox & Fairbairn, 2011). Through this study, the researcher sought to determine if ACCESS for ELLs composite scaled scores can predict college and career readiness benchmarks of ACT composite and subtest scores for English Language Learners.

Problem Statement

The assessment mandates that began with No Child Left Behind and continued with the Every Student Succeeds Act (2015) have had a direct impact on the academic performance of English Language Learners (ELLs). English Language Learners typically do not perform well on high stakes assessments, including high school exit exams and college readiness exams such as the American College Test (ACT), often scoring 20-50 points below their native-English speaking peers (Menken, 2010). Despite this, several states, including North Carolina, use the ACT as part of their school accountability program; North Carolina requires all 11th grade students to complete the ACT, regardless of English proficiency level.

North Carolina students, including ELLs, have lagged in meeting suggested college and career readiness benchmarks (ACT, 2016). As a result, the North Carolina General Assembly instructed the State Board of Community Colleges (SBCC) to produce a plan to move remedial math and English coursework into the high schools for students who do not meet minimum requirements. English and math course grades, End-of-Course test scores, and ACT scores are evaluated to determine if a student will be required to participate in remedial courses facilitated by community college faculty (Keaveney, 2016). For North Carolina English Language Learners, identifying relationships between proficiency level and ACT scores could reduce the need for required remediation by community college educators during their senior year. If strategies appropriate for improving English proficiency level are implemented prior to an ELL completing the ACT, a minimum composite score may be more attainable. The problem is that English Language Learners consistently lag behind their English proficient peers in academic achievement. Since academic achievement is one indicator of college readiness, more research is

needed to compare English language proficiency and academic achievements (Hamzah, et al., 2015; Martirosyan, et al., 2015). Specifically, research examining the relationship of English proficiency level and high stakes testing reflecting college readiness, like the ACT, does not exist.

Purpose Statement

The purpose of this predictive correlational study was to determine if an English Language Learner's ACT composite and subtest scores can be predicted by the reading scaled score obtained from the Assessing Comprehension and Communication in English State-to-State for English Language Learners (ACCESS for ELLs). This study used archival data of 11th grade ELL students gathered during four consecutive school years (2014-2018) in a medium-sized, suburban school district in the foothills of North Carolina. The predictor variable was the ACCESS test reading scaled scores. This test is a federally accepted assessment of English proficiency for English Language Learners that is used by North Carolina and many other states. It is administered once each year to identified ELLs to assess proficiency and progress with social and academic English language evaluated on four domains: listening, reading, writing, and speaking. ACCESS is an adaptable, criterion-referenced assessment that requires students to answer a variety of questions in three modes: multiple choice (listening and reading), orally constructed responses (speaking), and written constructed responses (writing) (WIDA Consortium, 2011). The number of questions is dependent on the performance of the student (Board of Regents of the University of Wisconsin System, 2015). For grades 9-12, the scale scores may range from 100-600 and are linked to language proficiency levels: 1-Entering, 2-Beginning, 3-Developing, 4-Expanding, 5-Bridging, and 6-Reaching (WIDA Consortium, 2011). The criterion variable was the ACT composite and subtest scores. The ACT is a nationally,

norm-referenced test administered six times each year to eleventh and twelfth-grade high school students. The ACT contains four multiple-choice subtests in reading, English, mathematics, and science. Each subtest score may range from 1-36. A composite score for the ACT may also range from 1-36 and is the average of the four sub-test scores.

Significance of the Study

The ACT is a college readiness assessment of content that incoming college freshmen may encounter and indicates achievement in areas of English, math, reading, and science (ACT, 2018). The questions were developed using state curriculum frameworks and a variety of adopted textbooks used throughout the country. Additionally, responses to national surveys of K-12 and post-secondary educators identified content and specific skills that should be included as part of the ACT (Allen, 2013). Composite ACT scores are used as an indicator of academic achievement and a predictor of college readiness.

The ACT can be used as one of several options for evidence of academic success that states may submit to satisfy federal mandates. North Carolina public schools use ACT composite scores as part of their accountability data for evaluating each school and school district. From 2000-2014 North Carolina was one of five states that saw the most significant rise in English Language Learner population reaching the national average of 6.9% in the 2013-14 school year. The achievement of ELLs lagged significantly behind their English proficient peers. In North Carolina, 83.3% of students graduate from high school compared to only 52.0% of ELLs (Sanchez, 2017). The rise in the English Language Learner population necessitates concentrated efforts to increase their academic achievement (Hamzah, et al., 2015; Martirosyan, et al., 2015).

This study examined relationships between language proficiency levels and ACT composite score, reading and math subscores. Information gleaned from this study will add to the

body of research regarding language proficiency, ELL's achievement, and college readiness testing. The results of this study may offer insight into the impact of English proficiency levels on student achievement among this growing subgroup. Since many districts around the country have as part of their strategic plan a goal to increase student achievement, specifically on the ACT, using predictive data will allow teachers and school administrators of ELLs to provide targeted interventions earlier in the school year (Nichols, et al., 2005). Additionally, findings from this study may be used as a basis for future research related to language proficiency and the Pre-ACT test, PSAT, or the SAT, as well as relationships among ethnicity, language proficiency, and the predictive power of these tests (Shewach, et al., 2017).

Research Question(s)

RQ1: To what extent can *ACCESS for ELLs*® reading scaled score of 11th grade English Language Learners in North Carolina predict a composite ACT score?

RQ2: To what extent can *ACCESS for ELLs*® reading scaled score of 11th grade English Language Learners in North Carolina predict a reading ACT subscore?

RQ3: To what extent can *ACCESS for ELLs*® reading scaled score of 11th grade English Language Learners in North Carolina predict a mathematics ACT subscore?

Definitions

1. *High-stakes Testing* – Assessments that attach consequences, or stakes, based on student performance (Nichols, 2005; NC Department of Public Instruction, 2018).
2. *Assessing Comprehension and Communication in English State-to-State for English Language Learners (ACCESS for ELLs®)* – large-scale, high-stakes, standards-based and criterion-referenced English language proficiency test (Fox & Fairbairn, 2011).

3. Language Proficiency – the language ability or ability in language and its constructs (Hamzah, et al., 2015).
4. *American College Test (ACT)* – A standardized college entrance examination accepted by all colleges and universities in the United States (ACT, 2018).
5. *Assessments* – Determine how much a student has learned and whether he or she has performed to a level of proficiency set by academic standards (United States Department of Education, 2018).
6. *Composite Score* – Average of the scores of the four subtests of the ACT, each ranging from 1 to 36 (ACT, 2018).
7. *Standards* – Set goals for what students should know and be able to do while learning academic content (United States Department of Education, 2018).
8. *WIDA* - The World-Class Instructional Design and Assessment Consortium provides high quality standards, assessments, research, and professional learning for educators of children and youth who are culturally and linguistically diverse (Board of Regents of the University of Wisconsin System, 2014).

CHAPTER TWO: LITERATURE REVIEW

Overview

The researcher will seek to determine if ACCESS for ELLs composite scaled scores can predict college and career readiness benchmarks of ACT composite and subtest scores for English Language Learners. Chapter 2 will explore the literature related to English Language Learners through the lens of Vygotsky's sociocultural theory and the accountability theory. The researcher will closely examine the topic of assessment, its history, and its relation to the success of English Language Learners. Additionally, this chapter will review and synthesize literature associated with English Language Learners, how they learn, and the impact their language proficiency has on their success in the classroom. Finally, the researcher will explore the literature associated with the ACCESS for ELLs test as it pertains to determination of language proficiency for ELLs, as well as the ACT and SAT tests, their use during the post-secondary admissions process for multiple subgroups, and their predictability for college success. This review of literature will reveal that no research exists directly relating an ELL's language proficiency and their composite or subscores on the ACT. Therefore, the results of this study will fill the gap in the literature and add to the overall literature base addressing English Language Learners.

Theoretical Framework

The sociocultural theory, developed by Vygotsky, addresses the idea that children are deeply rooted in their sociocultural frameworks and develop cognitively when they have opportunities to engage with others who are more experienced (Psychology Notes HQ, 2017). The primary focus of the sociocultural learning theory is the inter-relationships existing between individual mental functions and the environmental contexts where these functions manifest and

are developed (Eun, 2016). Inter-relationship development occurs through the processes of internalization and mediation (Eun, 2016). For the English Learner (EL), language learning requires more than merely learning the structure and meaning of language. “New content standards integrate content and language in ways prior standards have never done, reflecting a Vygotskyan perspective on knowledge as not distinct from the linguistic means through which it is acquired and expressed” (Bailey & Heritage, 2014, p. 481). It also requires the learner to interact with their environment in social contexts and develop strategies for understanding tone and dynamics as well as discerning body language displayed during those interactions (Bailey & Heritage, 2014). These collaborative interactions develop a learner’s language in the zone of proximal development: the distance between the potential to learn language and where actual language learning takes place (Zuengler & Miller, 2006). Teachers who identify skills, knowledge, and practices that fall on the edge of language development, may then provide specific supports or scaffolds to move a learner toward acquisition and language autonomy (Billings & Walqui, 2017).

The World-Class Instructional Design and Assessment Consortium (WIDA) has incorporated tenets of the sociocultural theory as part of their strategy to describe academic language necessary for an EL’s school success (WIDA, 2014). They recognize that ELs require approximately two years in an English-speaking school setting to develop social communication proficiency. However, development of academic language is a much longer and gradual process requiring knowledge to be facilitated and constructed via scaffolding within what Vygotsky suggested as the zone of proximal development (ZPD) (Roessingh & Douglas, 2012; WIDA, 2014). Instructional frameworks such as Sheltered Instructional Observation Protocol (SIOP) support language learner development and has its foundational base in the ZPD (Freeman, 2011).

Success for the EL requires active engagement, the intersection of involvement with genuine learning experiences, and a process of change within instructional frameworks structured li SIOP (Campbell, et al., 2014).

No Child Left Behind (2002) brought test-based accountability to the forefront of the nation's public schools. The accountability theory developed by P. Tetlock with assistance by J. Lerner is rooted in social psychology and supports the rationale for test-based accountability in United States public schools (Robinson & Timperley, 2000). Lerner and Tetlock (1999) define accountability as "the expectation, whether implicit or explicit, that one may be required to validate their actions, beliefs, or knowledge [in the case of education]". Validation is accompanied with the implication that failure will lead to negative consequences while success affords positive consequences or alleviation of punishment (Lerner & Tetlock, 1999). The accountability theory behind educational assessments is supported by three pillar theories: motivational theory, theory of alignment, and informational theory.

The motivational theory is based on the premise that improvement can be driven by attachment of consequences; either positive or negative (Roderick & Engel, 2001; Supovitz, 2009). Motivation theory can be applied to both teachers and students suggesting that motivation is mediated by the value and attainability attached to the goal. The motivation may be either intrinsic or extrinsic. Intrinsic motivation results when the impending outcome is valued by the teacher or learner or when the task itself is appealing. Extrinsic motivation often does not last and subsides when the incentive or threat is removed. External rewards or consequences may, in fact, weaken motivation due to the importance placed on performance alone (Roderick & Engel, 2001).

The other two pillars of the accountability theory primarily relate to educators: the theory of alignment and the informational theory. The theory of alignment is the idea that test-based accountability creates a need to associate all aspects of the educational system, both vertically and horizontally. Components of the educational system include objectives, curriculum, and assessment as well as the school system's directives and initiatives. The informational theory involves the notion that information gleaned from assessments may be used by a school system to guide instruction and influence student growth. Data gleaned from assessments may be used by teachers and district officials to shape all aspects of the educational system (Supovitz, 2009).

An English language learner's language proficiency is as varied as the learner himself. Acquisition and development of language within the Zone of Proximal Development are influenced by social contexts, time in the U. S., direct instruction, and language support. The level to which English proficiency has developed may potentially influence achievement as measured by high-stakes tests. Achievement reflected in composite and subscores of assessments, like the ACT, indicate college and career readiness and are powerful motivators for students and educators alike. The motivation for educators often involves satisfying school, district, or state achievement requirements. For the student, the motivation lies in avoiding remedial course work and attaining scores that are acceptable to attend their college or university of choice. The proposed study will examine potential relationships between language proficiency and achievement as measured by composite and subscores on a high-stakes assessment, the ACT.

Related Literature

English Language Learners

To many, it may seem that English as a second language (ESL) instruction is a fairly recent endeavor, perhaps spanning only a few decades. In reality, teaching English as a second language began as early as colonial times (Cavanaugh, 1996). During the 17th century it is projected that eighteen or more languages were spoken across the United States (Teaching as Leadership, 2009). The 18th and 19th centuries brought about some states engaging in efforts to begin bilingual education. At the beginning of the 20th century, however, the pendulum began to swing the other way and efforts began to submerge non-English speakers into the "American" culture and forsake their native languages altogether (Cavanaugh, 1996). In the early 1960s the government began to require bilingual education once again. Organizations such as Teachers of English to Speakers of Other Languages (TESOL) and legislation such as the Elementary and Secondary Education Act (1968) that included the Title VII - Bilingual Education Act began to move the pendulum once again. Efforts were made to provide equal educational opportunities and appropriate instructional strategies for ESL students leading to higher acquisition of English over the past few decades, but not enough progress has been made to mitigate the gaps (Alexander, 2017; Menken, et al., 2014).

The efforts of TESOL and associated legislation culminated in the development of The World-Class Instructional Design and Assessment Consortium (WIDA) in 2003. WIDA was born out of No Child Left Behind's (2001) concern for English Language Learners (ELL) and was initiated through an Enhanced Assessment Grant awarded to the Wisconsin Department of Public Education (Board of Regents of the University of Wisconsin System, 2018). WIDA is currently a consortium of 39 US states and territories whose goal is to advance academic

language and achievement of linguistically diverse students (Board of Regents of the University of Wisconsin System, 2018; Carjuzaa & Ruff, 2016). WIDA seeks to accomplish this goal using research-based standards and assessments to determine placement of English learners, addressing the needs of those students within their learning communities, making connections and collaboration between the student and their learning communities possible through professional learning and educator assistance, and nurturing relational aspects of teaching and learning (Board of Regents of the University of Wisconsin System, 2018; Carjuzaa & Ruff, 2016).

In recent years, instructional models supported by research conducted by WIDA and others and developed strategically for ESL students have arisen. The enactment of No Child Left Behind (2001) required college and career readiness for all students in reading and mathematics as well as achieving Adequate Yearly Progress (AYP) mandates. Specific provisions were made in Title III of NCLB for English Language Learners, requiring research-based language instruction to be carried out and results reported to the U.S. Department of Education (Aldridge & Goldman, 2007). These provisions were continued with the Every Student Succeeds Act (2015). In order for these provisions to be met, ELLs must participate in English language proficiency testing each year.

Students are identified for English proficiency testing by responses provided by their parent or guardian on a ‘Home Language Survey.’ Any student who does not cite English as their primary language spoken at home are generally flagged for initial testing (Shin, 2018). Initial testing will culminate in a specific classification that delineates an EL’s eligibility and scope of services. English Language Learners are required to participate in some form of yearly English proficiency testing until they are exited from their respective language programs or they graduate from high school. ACCESS for ELLs is a test of English language proficiency widely

used throughout the nation and provides assessment over four domains: listening, speaking, reading, and writing.

WIDA has developed English language proficiency standards with specific performance indicators to assist in the appropriate initial and continuing classification of EL students. Scores obtained from ACCESS for ELLs assessments are aligned with WIDA standards and indicate level of proficiency through a series of 'Can Do' statements. Based on their proficiency, students are placed on a continuum that ranges from Level 1 - Entering (concrete ideas, explicit meaning, familiar meaning, etc.) to Level 6 - Reaching (abstract ideas, implicit meaning, unfamiliar situations, etc.) (Board of Regents of the University of Wisconsin System, 2012). Most ELs at level 4 and above can function successfully in the regular education setting will little to no accommodation. Some states, like California, have developed their own language proficiency tests even going as far as classifying students who score higher than the intermediate level as Initially Fluent English Proficient. While similar to ACCESS, the levels and associated skills vary (Shin, 2018). Regardless of the language proficiency test, the level of proficiency informs decisions regarding students who need additional assistance with English in other content area activities (Beal, 2010). Students who fall on the lower end of the English language proficiency spectrum are required by ESSA (2015) to be assigned to language programs since they need the additional support (Shin, 2018). These students often are assigned to ESL labs to assist in language development. Additionally, ELL students usually receive modifications and accommodations for classwork, homework, and testing in the regular classroom, as well as accommodations for state testing.

Normally, North Carolina English Language Learners receive extended time, read aloud in English with a separate setting, or occasionally bilingual dictionaries/glossaries as

accommodations for during state testing. However, in a meta-analysis of 11 studies, Kieffer, et al., (2009) identified eight primary accommodations used for assessments by English Language Learners: English dictionaries, simplified English, bilingual dictionaries or glossaries, native-language versions of assessments (Spanish), dual language booklets, dual language questions, read-aloud in native language (Spanish), and extended time (Kieffer, et al., 2009). Each of these accommodations was evaluated based on their validity and effectiveness. Simplified English, bilingual dictionaries or glossaries, and native-language versions of assessments (Spanish) had inconsistent variability in their effect size which the researchers' acknowledged may provide some benefit to English learners (Kieffer et al., 2009). Only English dictionaries or glossaries had a statistically significant positive benefit to ELs, although the impact was small (Kieffer, et al., 2009).

The greatest barriers to achievement, aside from the obvious language deficits, for ESL students depend largely on socio-cultural factors. Student background and prior literacy experience group ESL students into three categories: those who come from homes that speak little to no English, those from homes where only English is spoken, and those who come from homes that speak multiple languages (National Council of Teachers of English, 2008). The age at which a student arrives in an English-speaking school setting is significant. Students who have received quality education in their native country and arrive after age 14 have some advantages. At this point students have attained important literacy skills in their first language that has moved them from "learning to read to reading to learn" (Roessingh & Douglas, 2012, p. 291). This shift usually occurs around the 4th grade equivalent and is accompanied by specific attributes. Late arrivers often have awareness of their own understanding and can assign appropriate learning and study strategies to educational situations. They have developed crucial content and

conceptual skills within their first language making the transition to learning in a second language more accessible (Roessingh & Douglass, 2012).

English as a second language specialist, Holly Ellwanger's (2016) experience supports Roessingh & Douglas's (2012) findings; noting three specific types of ESL students she has encountered. First, there are those students who have either been born in country or moved when they were very young. Barriers for these students are often socioeconomic and sometimes are in tandem with exceptional children's identification. The second group of students is transient. Often, they come from schools in their native countries where they have received a quality education. Therefore, their barrier is primarily language only because many of the skills necessary for school success have already been acquired. A final group comes from countries where education was limited or non-existent. In addition to the language barrier, they have tremendous academic deficits that can take years to overcome (Ellwanger, 2016). For these reasons, identifying appropriate strategies for ESL students is of critical importance.

Sheltered instruction is one way that ELLs can 'level the field' in education. Sheltered Instruction Observation Protocol (SIOP) developed out of a study conducted from 1996-2003 by the Center for Research on Education and sponsored by the U.S. Department of Education, with the goal of helping the diverse populations within the country to have greater academic success by incorporating specific strategies into content area instruction (Center for Applied Linguistics, 2016; Freeman, 2011). The focus is to aid teachers in the design and delivery of lessons to better address the academic needs of ESL students (Center for Applied Linguistics, 2016). Using the Sheltered Instruction Observation Protocol (SIOP), teachers blend visuals, prior knowledge, and repetition into instruction (Freeman, 2011). It is designed to address the specific needs of language learners while meeting the same rigor and content standards afforded to native English

speakers (Hansen-Thomas, 2008). The SIOP model involves the integration of eight components: lesson preparation to include building background and input regarding comprehension, lesson delivery to include strategies, interaction, and practice and/or application, and review and assessment (Center for Applied Linguistics, 2016). It incorporates collaborative and hands-on activities, focuses on content-area language, and thoughtful use of the student's native language into instruction and support services (Hansen-Thomas, 2008).

Ideally, this model is just part of an overall program a school will use to assist English Language Learners. The level of sheltered instruction should be dependent on the level of an ELL's language proficiency. English Language Learners who are at the early levels of proficiency benefit from English language development, native language instruction in core academic areas, and sheltered instruction for art, music, and physical education. Students having obtained intermediate proficiency levels may receive mainstream instruction the visual and performing arts, physical education and other electives, sheltered instruction in math and science, and native language instruction for language arts and social studies. Once advanced levels of English proficiency have been achieved, students receive mainstream instruction in all areas except language arts and social studies which remain sheltered (Markos & Himmel, 2016). This model is designed to use in all content areas and across grade levels, and along with linguistic accommodations, work to bridge the cognitive and linguistic gap (Kareva & Echevarria, 2013).

English Language Learners are just like other students in that their learning styles vary. However, emerging research indicates that differences do exist for ESL students and their preferred learning modality with regard to age, gender, and time speaking the language. Earlier studies seem to show that learning styles develop through regular developmental processes (Zhang & Evans, 2013). Young children, regardless of language deficits, tend to be more

kinesthetic and tactile and move to more auditory and visual preferences as they mature. In a study by Zhang & Evans (2013), this concept appears to be supported as significant differences in learning styles were noted for students who have been learning English for ten or more years. These students tend to be more visual than their peers who have been learning English for a shorter period of time (Zhang & Evans, 2013). Researchers suggest that this can be attributed to greater development in their reading competency and simply because pictures and objects are easier to comprehend than words.

Gender is also a variable that contributes to differences in learning styles. Females, in general, prefer learning by making concepts meaningful in their lives, while their male counterparts seem to learn best through more abstract means (Torres, 2014). As far as particular styles research is inconsistent among ESL students. Generally, males tend to be more kinesthetic and females more auditory, however, one study cited females as more kinesthetic (Zhang & Evans, 2013). Latinos, in general, prefer dim learning environments, with the element of light being more significant for females than males. Male students prefer noise to be incorporated into the learning environments, and female ESL students highly prefer structured learning environments (Torres, 2014).

The main objective when teaching the English language learner is to enhance individual differences as they relate to learning and to identify the positive influence these differences may play in the learning process. When students are aware of their learning style, they tend to learn more (Ghaedi & Jam, 2014). Motivated learners are more actively engaged, and they tend to see the importance of metacognition with regard to learning strategies that are most appropriate for their particular learning style (Ma & Oxford, 2014). Ghaedi & Jam (2014) found there to be "a significant relationship between the learning styles and motivation of ESL learners for higher

education" (p. 1236). Highest correlations occurred between visual learners, indicating greater levels of motivation for higher education (Ghaedi & Jam, 2014). This is possibly due to preference of visual learners to read over other learning activities thus, creating opportunities for the learner to absorb significantly more information.

Many factors influence a language learner's educational development. An ELL may enter the walls of a U.S. public school will little to no prior schooling creating significant variation in content knowledge. Their first languages may be similar to English or hold little to no lexical similarity; creating a myriad of differences in how students learn content vocabulary (National Council of Teachers of English, 2008). Since no two ELL students learn in the same manner, identifying not only learning styles but learning strategies to complement the style is vitally important. According to ESL specialist, Holly Ellwanger (personal communication, November 9, 2016), a student whose learning style is visual benefits from picture cues, graphic organizers, infographics and interactive notebooks. Physical learners tend to succeed in using Total Physical Response (TPR), experiments, and games. Logical learners enjoy games, puzzles, graphic organizers, and infographics, while social/auditory learners are successful when employing games, partner activities, and cooperative learning groups.

Language learners employ numerous strategies to facilitate their language acquisition and development. Learning strategies can be classified as either direct or indirect (Oxford, 1990; Shi, 2015). Direct strategies include strategies for memory to assist students in the recall of information or drawing connections between concepts. Cognitive strategies are those involved in the understanding and production of language. Compensation strategies are those that students use to make up for deficits in knowledge. This strategy includes using context clues or guessing to arrive at a conclusion (Shi, 2015). Indirect strategies include those that are metacognitive in

nature, such as self-monitoring for errors and planning tasks. Affective strategies can be used by students to increase motivation and assist in managing emotions. Social strategies promote learning through interaction with peer groups through collaborative activities (Shi, 2015). When considering these strategies in terms of the ESL student, Hispanic students tend to use more social strategies, while Asian students often approach learning tasks through rote memorization (Politzer & McGroarty, 1985; Shi, 2015; Tyacke & Mendelsohn, 1986).

In order to meet the unique needs of the ESL learner, teachers must be proactive and aware of their teaching styles and how it may complement the learning styles of their students. They must also search for effective strategies for ESL instruction. When presenting ESL students with new content, it is important that "big ideas" about the subject be presented; providing rich learning experiences for students to facilitate memory (National Council of Teachers of English, 2008). Such experiences should include cooperative activities that involve interaction with peers. These types of experiences can be successful not only in middle and high school ESL classrooms but also were found to be effective in the elementary classroom as well. When collaborative learning activities are paired with linguistic scaffolding (request for assistance and other correction) and are recognized by students as opportunities for language learning, a more effective learning environment is created for all students (Gagne' & Parks, 2013).

Assessment

Most historians agree that the idea of standardized testing began in China as early as the seventh century. At this time, the Chinese government administered written tests to those being considered for civil service. These tests included their understanding of Confucian philosophy and their ability to write poetry (Standardized Testing, 2015). It was not until much later, the nineteenth century, in fact, that standardized testing arrived in the American educational system.

Horace Mann was a lawyer and politician who is credited with instituting the idea of public schools in the United States. Mann's "common" school was rooted in the idea that the state had a responsibility to educate children to increase their intelligence thereby promoting social reform (Gutek, 2011). He argued that the common schools would:

> (1) educate for responsible citizenship in a republic, (2) provide the knowledge needed for national economic development and prosperity, (3) serve as the great economic equalizer that would reduce class conflicts, and (4) instill moral and ethical values in the young. (Gutek, 2011, p. 235)

Mann believed the common school's curriculum should include basic skills that all children should know; those needed by businessmen, tradesmen, and common citizens alike (Gutek, 2011). It was out of this conviction that Mann first called for standardized testing in math, spelling, and geography to occur in Massachusetts common schools in 1845 (Standardized Testing, 2015).

Many years passed before standardized tests became widely used in America. The first significant presence of standardized testing was not intended to evaluate achievement but intelligence. In the early 1900s, Alfred Binet developed the idea of the 'intelligence quotient' and began using question and answer based written tests to assess the presence of mental disabilities in children (Knoester & Au, 2017). Additional IQ tests were developed out of the eugenics movement to measure human intelligence that would support the belief in a natural hierarchy of racial and social groups. These IQ tests were quickly followed by norm-referenced achievement tests in the 1920s. The achievement tests were designed so that the results would fall along with a normal data distribution (bell-shaped curve) and be in line with the IQ tests achieving the same or similar results (Neill, 2016). These two tests provided a means of evaluating students; to weed

out the "slower" ones making the teaching of the "promising" ones more efficient (Gershon, 2015). Additionally, in the 1920s, colleges began requiring entrance examinations for admission. The College Entrance Examination Board was developed to promote the College Board test, now the Scholastic Aptitude Test (SAT) (Gershon, 2015; Neill, 2016). Originally the College Board test was an essay exam, but this quickly gave way to the multiple-choice SAT for convenience of scoring, due to the large numbers of students desiring to attend college (Neill, 2016).

By the 1960s, many public school systems were incorporating some type of standardized achievement testing. The primary purpose of these assessments was to monitor the progress of students and to make curricular decisions. The Elementary and Secondary Education Act (ESEA) of 1965 began to channel federal funds to high poverty schools. In an effort to evaluate the effectiveness of the Title I programs, large-scale standardized testing programs for grades 3-8 were launched; requiring students to be assessed at least once each year (Neill, 2016). This increase in testing was followed by the beginning of high school exit and minimum competency exams in the late 1970s.

The 1983 report by Ronald Reagan's National Commission on Excellence in Education, *A Nation At Risk*, ushered in a new era in school reform. The report highlighted the mediocrity and failings of America's public schools. In the fervor of the Cold War and amid the growing concerns of corporate and government officials, the report demanded that immediate action be taken (Hursh, 2005; Neill, 2016). This report also cited the abysmal performance of America's school children on comparative international assessments and recommended that all students be tested at transitioning levels (Educator Advocates, 2013). As a result, most states developed assessment policies and curricular standards. Associated standardized tests were created to assess these standards. In some cases, such as Florida and New York, test scores had 'high-stakes'

attached to them; even to the point of making graduation contingent upon satisfactory scores (Hursh, 2005).

By the 1990s, the Elementary and Secondary Education Act had been reauthorized several times; each calling for stiffer standards, and greater accountability. President Clinton, in 1994, signed into law a version of ESEA that demanded school districts align their standardized tests to curriculum standards. Included in this reauthorization was the mention Adequate Yearly Progress (AYP) (Hursh, 2005). In 1999 a report entitled *Before It's Too Late* was released by the National Commission on Mathematics and Science Teaching for the 21st Century chaired by former astronaut, John Glenn. This report along with findings from the Third International Mathematics and Science study indicated areas of weakness in science, technology, engineering and mathematics. These reports helped to initiate the 2002 reauthorization of ESEA known as No Child Left Behind (NCLB) (Bulgar, 2012).

President George W. Bush signed No Child Left Behind into law on January 8, 2002 with tremendous support from Congress (Hursh, 2005). Corporate and educational policymakers were lobbying for tangible ways to hold teachers accountable for educational outcomes, both positive and negative. NCLB extended the assessment mandates that many states had already set in action (Hurch, 2005). NCLB was based on four main principles: accountability, flexibility for states, parental choice, and research-based teaching practices (Aldridge & Goldman, 2007). This legislation addressed the education of students from kindergarten through high school and increased the role the federal government played in ensuring accountability of outcomes (Klein, 2015). NCLB was particularly attractive to lawmakers because its goal was to level the educational field; providing equity in curriculum and rigor for special populations, including those with socio-econmic disadvantages and students of color (Hursh, 2005).

Under NCLB, several criteria were required to be met by the states. Assessment was one of the main tenets. All students in grades three through eight must be assessed each year in reading and math, and once in high school (Klein, 2015). Additionally, science assessments must occur at least once in grades 3-5, 6-9, and 10-12. English proficiency tests must also be given to students identified as limited English proficient (U.S. Department of Education, 2004). These assessment results were then used to determine AYP for students, and subsequently, to determine the performance of teachers and schools.

Most recently, the Every Student Succeeds Act (ESSA) was signed into law by President Barack Obama in 2015. The Every Student Succeeds Act (2015) was a bipartisan effort intended to address criticisms on both sides of the educational aisle. While not changing the standardized testing requirement of English and mathematics in grades 3-8 and high school, ESSA did create more flexibility in how the requirement was carried out by the states (Dennis, 2017; Gewertz, 2018). Additionally, ESSA authorized greater state autonomy, shifted policy in labeling and accountability requirements of English Language Learners, and identified prohibited actions by the U.S. Department of Education and the Secretary of Education (Ferguson, 2016).

With the implementation of ESSA during the 2017-18 school year, emphasis on high stakes testing diminished somewhat. The Every Student Succeeds Act (2015) moved accountability control from the federal government and returned it to the states. While states must no longer follow prescriptive mandates from the federal government, ESSA allowed states to identify and set educational goals that reflect their school populations and unique learning needs (El Moussaoui, 2017; Every Student Succeeds Act, 2017). The goals surrounding student success need not only focus on high stakes test scores, but goals may be selected from indicators such as student achievement, graduation rates, English language proficiency, school climate,

safety, or college readiness (El Moussaoui, 2017). Additionally, ESSA requires the inclusion of college and career readiness standards which connects K-12 with post-secondary education (El Moussaoui, 2017; Every Student Succeeds Act, 2017; Matin, et al., 2017).

The intention of these federal policies and state adaptations of them were noble. However, in the quest to increase the effectiveness of public schools demanded by *A Nation At Risk* (1983), and reduce inequities and increase educational outcomes for marginalized groups called for by the Individuals with Disabilities Education Act (IDEA) (1990), No Child Left Behind (2001) and the Every Student Succeeds Act (2015), caused the opposite effect to happen. A collision had occurred between the mandate to meet the individual needs of students caused by socio-economic, racial, language or other barriers and the requirement that all students, regardless of need, must perform and exhibit college and career readiness. Many states, despite the flexibility in assessment afforded by ESSA, still require some form of high stakes testing. Much emphasis has been placed on test scores and technical solutions, without or limiting attention to contextual and structural factors contained within the tests and their administration. Consequently, such emphasis has promoted an increase in and propagation of inequity for these marginalized groups. These inequities are particularly felt by students with disabilities that fall within marginalized groups. In a qualitative study conducted in a California high school that is 50% Latino, 49% Black, and 1% White/Asain, 15 special needs students participated in focus groups and individual interviews. These students noted high numbers of substitute teachers, inequities in teacher quality for separate and inclusion classes, inadequate access to the curriculum, including appropriate textbooks and resources (Tefera, 2019). Consequently, the aforementioned issues coupled with tests that are constructed from a perspective that is largely not inclusive ultimately neglect and penalize highly diverse schools and the students they serve.

In 2014, 24 states required the passage of a high school exit exam in order to receive a high school diploma (Jimerson, et al., 2016). Ideally, high school exit exams give credence to a high school diploma as well as identifying a minimum competency level for high school graduates. If implemented to fidelity, improvement should be noted in graduation rates and achievement. This is due to directing the attention of all educational stakeholders toward the right content using appropriate measures. Unfortunately, failure to implement such exams effectively leads to a narrowing of the curriculum, teaching, and learning, and potentially may lead to inequities throughout the assessment process (Caves & Balestra, 2018). Thus, mixed results as to the effectiveness of high school exit exams have been reported (Ahn, 2004; Bishop & Maine, 2001; Dee, 2003; Jacob, 2001).

Some studies have found positive impacts on achievement (Ahn, 2004; Bishop & Maine, 2001; Woessman, et al., 2007). Others noted negative impacts on graduation and dropout rates following the failure of an exit exam (Ahn, 2004; Dee, 2003; Jacob, 2001). Caves and Balestra (2018) using longitudinal data from the Center on Education Policy, found increases in graduation rates and positive impacts on achievement over time for states that use high school exit exams. However, direct relationships could not be drawn due to numerous influencing factors (Caves & Balestra, 2018).

College and Career Readiness (CCR) is one of the markers required to be assessed in accordance with the Every Student Succeeds Act (2015). Each state, however, defines CCR according to its own curriculum, objectives, and accountability protocol. In lieu of creating their own standardized assessments for high school students as required by ESSA and to address the CCR mandate, some states are incorporating the SAT or the ACT into their accountability rubric. Currently, 14 states, including North Carolina, require high school juniors to take the ACT, and 7

states and the District of Columbia, require the SAT (Muniz, 2018). This is a natural progression for states to use traditional college entrance exams as an assessment of college and career readiness. To do this, states must offer rationale as to how the SAT or ACT is aligned with current content standards; showing equivalence in-depth and breadth of coverage, and difficulty to state assessments already in use (Lazarus & Thurlow, 2016).

ACT and SAT

Most U.S. college-bound students will take a college entrance test in preparation for transition from high school to college. Juniors and seniors approaching this transition normally take the SAT or the ACT, or sometimes both. The SAT and ACT are accepted by all colleges and universities throughout the country and at first glance, appear to be very similar. Both tests measure proficiency in areas crucial to college success, like reading comprehension and problem-solving. Since the restructuring of the SAT in 2016, both tests have become more similar in content as well. Both tests offer similar subtests, an optional essay, score only correct answers without penalty for incorrect ones and use entirely passage-based reading and English/writing questions (Muniz, 2018).

For many years, the Scholastic Aptitude Test (SAT) was the admissions test of choice for colleges and universities across the country. The SAT is intended to assess how prepared a student is for post-secondary coursework, both in content and applied skills. The SAT is composed of four sections: reading, writing/language, and two math sections (calculator active and calculator inactive). Scores are divided into two subscores: verbal, which includes the reading and writing/language tests, and math, which includes the two mathematics sections. Both subscores range from 200 to 800, for a maximum possible score of 1600. The optional essay section is scored using a rubric scale from 1-4 by two readers. Essays are evaluated in the areas

of reading, analysis, and writing, for a maximum possible score of eight in each area (Muniz, 2018).

The reading test is multiple choice and is 65 minutes in length. It includes passages from U.S. literature, U.S. founding documents or a text that has been influenced by them, social sciences, and two passages from the natural or applied sciences. It explores skills that can be applied in all subject areas, including identifying evidence, context, and analysis. The writing/language section is a 35-minute, multiple-choice test that examines the student's command of daily English language use. In addition to the skills explored in the reading test, the writing/language section examines standard grammar and punctuation of the English language, as well as how ideas can be expressed to improve work (College Board, 2019). Mathematics is broken into two sections, calculator active and inactive. A total of 75 minutes is allotted for both sections of the math test. The majority of the subtest is multiple-choice, however approximately 22% are gridded response, requiring the student to express their numerical answer as a whole number, fraction, decimal, or percent, and bubble the response in a grid. This test explores the mathematics skills of fluency, conceptual understanding, and application of algebra, problem-solving, data analysis, complex equations, and geometry/trigonometry associated with college and career readiness. The SAT also provides an optional essay section. Many colleges across the country, including all 16 UNC system universities, do not require this section. However, opting to participate in the essay portion enables the student to experience what college writing will be like and how they might perform when required to analyze an author's argument and support the argument with details from the text (College Board, 2019).

In recent years, the American College Test (ACT) has become equally accepted throughout the collegiate community. The ACT is an assessment that incorporates achievement

tests in core academic areas with the purpose of evaluating a student's ability to apply skills such as problem-solving, inference, and evaluation of ideas, all of which are important for post-secondary success. It is composed of four subtests: reading, English, mathematics, and science. Each subtest of the ACT is completely multiple choice. Questions are classified by their depth of knowledge (DOK) as either 1 (recall and reproduction), 2 (skills and concepts) or 3 (strategic thinking). Subtests are scored from 1-36, then those content scores are averaged and rounded to the nearest whole number to obtain the composite score. ACT recommends minimum scores of 18 in English, 22 in mathematics, 22 in reading, and 23 in science, for a student to be considered college and career ready. The ACT also includes an optional essay portion that does not factor into the composite score. The essay is scored by two readers on a scale from 1-6. Readers evaluate essays according to a rubric in the areas of ideas and analysis, development and support, organization, and language use and conventions, with a maximum possible score of 12 (ACT, 2017).

The SAT and ACT are considered predictors of college success however, they do not necessarily measure the same things. The SAT is considered an aptitude/achievement test that examines verbal and reasoning skills necessary for college success, as well as the content that was taught in high school, while the ACT is considered an achievement test only examining content objectives that have been taught in the classroom (College Board, 2018). The SAT has fewer questions but offers more time per question making it a longer test overall. Additionally, the SAT breaks the mathematics section into two parts, calculator active and calculator inactive, and provides a formula reference page (College Board, 2018; Muniz, 2018). The ACT includes a science subtest that measures the interpretation of data, scientific investigation, and evaluation of models, inferences, and experimental results (ACT, 2017).

Regardless of which assessment is selected, the inclusion of the SAT or ACT in a state's accountability protocol not only provides information regarding the college and career readiness of students but also allows students to earn scores that can be sent to colleges or universities. These reports are sent at no cost to the student. Hurwitz et al. (2015) found that when students are required by the state to take either the SAT or the ACT, there is a two to three percent increase in four-year college enrollment (Hyman, 2017; Hurwitz, et al., 2015). This increase can be attributed to several factors including the reduction in cost for the student and their family, the convenience of testing on school grounds or having travel to and from the testing location covered (Hyman, 2017). Additionally, individuals receive information from colleges and universities regarding admissions and financial aid that answers questions and opens doors for students who previously did not consider post-secondary education as an option.

While many studies agree that high school grade point average (HSGPA) is considered the most significant predictor of college success for most subgroups, both the SAT and ACT are known to predict skills and outcomes for students who are entering post secondary education (Higdem, et al., 2016). This predictability is the reason so many colleges and universities are hesitant to completely remove these assessments from their admissions criteria. Typically, college readiness assessments such as the ACT and SAT reveal moderate-to-large correlations with first-year college grades (Higdem, et al., 2016; Kobrin, et al., 2008; Westrick, et al., 2015). Using data from the Ohio Board of Regents, Bettinger et al. (2013) found, "the ACT composite score has a large and significant impact on first-year GPA: A one-point increase in the ACT composite score is associated with a 0.072 increase in the GPA" (p. 33). More specifically, the mathematics and English subtests were shown to be more closely correlated to college success

than reading or science. Increasing the subscore in either mathematics or English by only one point was associated with an increase in first-year GPA of about 0.035 (Bettinger, et al., 2013).

Cognitive variables produce a greater advantage in predicting college performance (ie. GPA, persistence, etc), especially for those students who are admitted under special circumstances, such as seeking admission after obtaining a GED or graduating from a non-traditional educational environment/homeschool (Kim, 2015). As previously discussed, research has revealed the consistent predictability of HSGPA and standardized tests like the SAT and ACT for academic success at the postsecondary level. The majority of these studies do not address students admitted to college under special circumstances like homeschooling. A study by Yu, et al. (2016) examined how homeschool students compared to those from traditional educational environments in postsecondary performance. A sample of 732 homeschooled students was compared with a similar group of traditionally educated students who were enrolled in 140 colleges and universities throughout the United States, using data provided by the College Board. The sample of homeschooled students was found to have no difference in HSGPA and SAT scores when compared to their traditionally educated counterparts. Likewise, there was no difference in their retention from their first to second year of college. However, it was demonstrated through the study that HSGPA did not accurately predict first-year college GPA (FGPA) for homeschooled students. As a result, standardized test scores like the SAT better predicted first-year college performance (Yu, et al., 2016).

It is notable that research specifically addressing comparisons in test performance on the SAT versus the ACT for English Language Learners is lacking. Both tests provide accommodations for ELLs including extended time, bilingual dictionaries/glossaries, and directions in the students' native language. Many test prep internet sites make recommendations

as to which test is better suited for students. With the propensity for ELLs to struggle with language proficiency and the impact that language proficiency has on reading and writing, the ACT appears to be the better choice. Test prep writer Samantha Lindsay (2015) recommends students who are easily confused by questions, experience test anxiety or do not excel in reading, grammar, or writing to consider the ACT as their testing option. A study by M. Thomas (2004), examined the growing trend of students to take both the SAT and the ACT, thus increasing the likelihood of acceptance to colleges and universities. Her findings indicate that students who are Hispanic or Asian are less likely to take both tests. Therefore, it would appear that ELLs may have greater success with the ACT (Thomas, 2004).

ELLs and Assessment

Culturally and linguistically diverse students are identified by the U. S. Department of Education as those learners whose academic potential is hampered by their inadequate mastery of content caused by limits in their English language proficiency (Carjuzaa & Ruff, 2016). In order for students to be successful in school, they must acquire an advanced level of academic language proficiency. Advanced academic literacy is revealed in a student's ability to engage with content via reading, writing, and/or thoughtful discussion, apply content knowledge in different situations, and successfully demonstrate mastery of content on assessments (Langer, 2001). CLD students have not yet acquired this level of proficiency and therefore have literacy skills that prevent them from successfully accessing content across the curriculum (Carjuzaa & Ruff, 2016).

While numerous subgroups have their own unique learning needs, the English Language Learner (ELL) is directly addressed in the Every Student Succeeds Act (2015). Specifically, provisions for ELLs have moved from Title III to Title I of the Act and must be included in each

state's accountability policy. To effectively accommodate assessments for these students, schools must first evaluate language proficiency using an appropriate measure such as the Test of English for International Communication (TOEIC), the Test of English as a Foreign Language (TOEFL), or Assessing Comprehension and Communication in English State to State for English Language Learners (ACCESS for ELLs). TOEIC examines the domains of listening, reading, speaking and writing, but is designed to measure language proficiency needed in an international business environment (Powers & Powers, 2015). TOEFL is another widely regarded test of language proficiency. It is primarily used by English-speaking colleges and universities to assess academic language for international students (Kim, 2017).

ACCESS for ELLs is the assessment of choice for K-12 English Language Learners in North Carolina. Like TOEIC, ACCESS for ELLs assesses language proficiency over the domains of listening, reading, speaking, and writing, but is aligned with WIDA English Language Development Standards, and exceeds requirements of ESSA for monitoring and reporting English language proficiency (Board of Regents of the University of Wisconsin System, 2014). ACCESS for ELLs is administered to all North Carolina English Learners (EL), kindergarten through twelfth grade, who have been identified through their "Home Language Survey" as speaking a language other than English at home. Language proficiency scores determine if a student will qualify for classroom accommodations and modifications and/or accommodations on all North Carolina state assessments. English Language Learners who score a 5.0 (Bridging) or lower on ACCESS for ELLs are eligible to receive testing accommodations. Testing accommodations may include one or a combination of word-to-word bilingual (English/native language) dictionary/electronic translator, multiple test sessions, scheduled extended time, separate setting, student reads test aloud to self, or test read aloud (in English) (North Carolina

Department of Public Instruction, 2017). English Language Learners who are also classified as having a disability will receive accommodations based on their individual education plan (IEP).

Numerous studies have examined the relationship between English language proficiency and academic achievement. Many address this relationship between international university students. Light et al. (1987) and Staynoff (1997) identified a positive relationship between language proficiency as measured by TOEFL and academic achievement as measured by a college student's GPA. Others like Krausz et al. (2005) found differing results showing TOEFL as an ineffective predictor of academic achievement as measured by GPA. In a more recent study, Maritirosyan et al (2015) determined self-reported English proficiency as a statistically significant predictor of GPA in university students, with higher academic performance among university students who spoke more than two languages.

Educational research at the elementary, middle, and high school level, though somewhat limited, has been conducted that relates the achievement of English Language Learners to their English-speaking peers (Polat et al., 2016). In their study, Polat et al. (2016) used National Assessment of Educational Progress (NAEP) data from 2003-2011 to examine growth of ELL and non-ELL students in fourth and eighth grades in the areas of mathematics and reading. Results showed non-ELLs in both fourth-and eighth grade consistently outperformed their ELL peers in both mathematics and reading on national achievement tests (Polat, et al., 2016). These findings support the previous research of Lubienski and Lubienski (2006) which revealed a gap in mathematics achievement of 6.5 points for Hispanic and 4.2 points for American Indians. Likewise, a study by Capraro et al. (2009) found statistically significant differences in achievement and growth in mathematics between Black and Hispanic students and their White peers. Additionally, even with efforts to improve achievement of ELLs under No Child Left

Behind, little has been accomplished in closing the achievement gap. Polat et al. (2016) echoed findings of Lubienski and Lubienski (2006) and Capraro et al. (2009) that NCLB had not fulfilled the promise to reduce the achievement gap between the five million ELL students and their non-English speaking peers.

When assessments, classroom, or high-stakes tests are administered to English Language Learners, it is impossible to completely separate language proficiency from content knowledge (Menken, 2010). For ELLs, every assessment requires language demands and therefore becomes an assessment of English ability and proficiency (Kieffer, et al., 2009). The Every Student Succeeds Act's requirement that all students must participate in state assessments creates a problem in the evaluation and analysis of results for ELLs. It is not enough for ELLs to merely participate in such assessments. The data revealed as a result of these assessments must lead to valid inferences regarding achievement (Kieffer et. al., 2009). Educational research relating assessment and ELLs is conclusive: for true evaluations of a student's knowledge and application of curriculum, tests should not be administered in English. Consequently, using results of assessments administered to ELLs in English for the purpose of making decisions regarding placement, promotion, or graduation, or for school report-card purposes is invalid (Menken, 2010).

Twelve states, including Texas, New Mexico, and Florida, require students to pass exit exams for graduation (Gewertz, 2017). This poses a problem for ELLs due to the complex academic language these exams contain. Even mathematics assessments, which are often considered less heavy on academic language, contain unfamiliar terms such as commutative, histogram, concurrent, and the like. National tests, like the ACT, are filled with complex academic language and only administered in English, the language ELLs are learning (Menken,

2010). The ACT allows ELLs to apply for one or more approved supports including extended time (not to exceed time and a half), approved word-to-word bilingual dictionary (without definitions), test directions in the native language, and testing in a familiar environment/small group (ACT, Inc., 2019). They must provide documentation regarding their classification as a language learner, state testing accommodations, and ACCESS scores. Often, the only accommodation approved on these national tests for ELLs is extended time which was not shown to be of significant benefit according to Kieffer, et al. (2009). This specific accommodation does not focus on the factor that will impact the ELLs score, the academic language (Kieffer et al., 2009). It is, therefore, no wonder that ELLs perform poorly on these assessments.

All juniors, including English learners, are required to take the ACT each year as part of North Carolina's accountability policy. ACT scores are part of each district's and the state's report card that includes not only testing information, but also other components that must be reported as part of the Every Student Succeeds Act (2015). While much research exists regarding an ELL's potential for college success (Flores & Drake, 2014; Jimerson et al., 2016), it focuses on the ELL's language proficiency and subsequent GPA, their socio-economic status and GPA, thus looking backward. ACT composite scores are one indicator of college and career readiness, yet no research exists as to the strength of relationship between an ELL's language proficiency and their ACT composite or subscore(s).

Summary

Assessment has been part of schooling for centuries. Standardized tests include any test that asks all test takers the same questions, or questions from a common bank of questions that have the same type of wording and design. Such tests must be scored in the same manner, enabling the testing body to make appropriate comparisons among test takers (Stotsky, 2016).

Standardized testing is a way for educators to assess not only how well students understand concepts, but also their teaching methods and strategies. In this regard, testing is beneficial. Its purpose seeks the best for teachers and students alike: to modify instruction and thereby ensure understanding and application of the material. It is when these intentions are skewed to support particular interests or agendas that issues arise. Now, high stakes standardized test scores are a driving force for educational decisions at all levels. The autonomy of the classroom teachers and LEAs have been replaced by top-down decisions from the federal and state level. Such issues have manifested themselves in our modern classrooms and have created significant problems in relation to teaching and learning particularly with subgroups of students like those who are English Language Learners (ELL).

Students who are considered English Language Learners (ELL) are one of the fastest growing populations within the public schools. These students are often labeled by several acronyms: English as a Second Language (ESL), Limited English Proficient (LEP), etc. In the 2013-14 school year, the ELL student population had increased to roughly 9.2 percent (4.4 million students) according to a report by the National Center for Educational Statistics (Stotsky, 2016). Alaska, Colorado, Nevada, New Mexico, and Texas have greater percentages of ELL students, with California having the highest percentage at 22.7% of their student population having limited English proficiency (Carjuzaa & Ruff, 2016; Stotsky, 2016). Among the US population of LEP students, 400 different languages and dialects are spoken, however, more than 80% of EL students in the United States speak Spanish as their native language (Carjuzaa & Ruff, 2016). Latina/o students have a myriad of socio-cultural, structural, and economic conditions with which they must contend, in addition to their language issues (Crisp, et al., 2015). These students have unique learning needs that require modified, targeted instruction such

as language training or bilingual education, to assist them in improving their English proficiency, academic outcomes, and college and career readiness (Carjuzaa & Ruff, 2016).

Currently, the majority of colleges and universities in the United States factor college readiness tests like the SAT or ACT into their admissions protocol. Many states also require either the SAT or ACT as a way to meet the assessment mandate of the Every Student Succeeds Act (2015) (Lazarus & Thurlow, 2016; Muniz, 2018). The ACT, in particular, is based on the National Common Core Standards, and therefore, has become a natural and convenient option for many states, including North Carolina, to use as a required assessment (ACT, 2017; Muniz, 2018). While accommodations are available for English Language Learners on the ACT, their impact is not enough to mitigate the negative impact of limited language proficiency for these students (Kieffer et al., 2009). Likewise, due to the propensity of ELLs, specifically those identified as Latina/o, to live in lower-income neighborhoods, these students often do not have access to appropriately funded public schools resulting in limited resources and lower instructional quality (Crisp et al., 2015).

Given the impact of language proficiency on assessment and the high-stakes that are being attached to college-readiness testing like the ACT by several states and most post-secondary institutions, it follows that identifying if any correspondence or predictability exists between the two scores would be valuable. If a student's ACT composite and subscores could be predicted based on language proficiency levels, ELLs could receive targeted instruction to assist them in reaching the necessary score(s) to be considered college and career ready. Unfortunately, no research exists that directly addresses language proficiency scores obtained from tests like ACCESS for ELLs and the ACT composite or subscores.

CHAPTER THREE: METHODS

Overview

The purpose of this study is to determine if the Assessing Comprehension and Communication in English State-to-State for English Language Learners (ACCESS for ELLs) test composite and reading scaled score can be used as a predictor of the American College Tests (ACT) composite and subtest scores. Chapter 3 will identify the research design, research questions, and hypothesis. Further, chapter 3 will discuss the participants, setting, and instrumentation as well as the procedures followed in conducting the study.

Design

This research study employed a predictive correlational design. This design is appropriate for the study because correlational research seeks to determine if relationships exist between two variables by showing their strength and direction (Gall, et al., 2007). This type of research only examines relationships between variables, it does not show that one variable causes another. Predictive correlational studies, "predict scores on one variable from research participants' scores on another variable" (Gall, et al., 2007, p. 337). For this study, a predictive correlation design was used to determine if composite and subtest scores on the American College Test (ACT) can be predicted based on the Assessing Comprehension and Communication in English State-to-State for English Language Learners (ACCESS for ELLs) reading scaled scores of 11th grade English Language Learners. Prediction of ACT composite and/or subscores will be beneficial as ELLs work toward satisfying state graduation and post-secondary benchmarks.

The predictor variable for this study was ACCESS for ELLs reading scaled scores. ACCESS for ELLs is a criterion referenced, federally approved assessment of language

proficiency for English Language Learners. Since the predictor variable, ACCESS for ELLs reading scaled score, is defined as a psychometrically derived score from 100 to 600 that can be interpreted to describe an examinee's English language proficiency demonstrated by their reading comprehension (Fox & Fairbairn, 2011), ACCESS for ELLs was chosen as the predictor variable due to the academic language load demanded by the ACT. The criterion variables for this study were the composite score achieved on the ACT and the sub-scores from the reading and mathematics subtests. The ACT is a norm-referenced college readiness assessment that is administered to high school juniors and seniors nationwide. The criterion variables, ACT composite score and sub-scores, may range from 1-36. The composite score is the average of the scores obtained on the four subtests.

Research Question(s)

RQ1: To what extent can ACCESS for ELLs reading scaled score of 11th grade English Language Learners in North Carolina predict a composite ACT score?

RQ2: To what extent can ACCESS for ELLs reading scaled score of 11th grade English Language Learners in North Carolina predict a reading ACT subscore?

RQ3: To what extent can ACCESS for ELLs reading scaled score of 11th grade English Language Learners in North Carolina predict a mathematics ACT subscore?

Hypothesis(es)

The null hypotheses for this study are:

$H_0$1: There is no statistically significant predictive relationship between the predictor variable ACCESS for ELLs reading scaled score and the criterion variable, ACT composite score for 11th grade English Language Learners.

$H_0$2: There is no statistically significant predictive relationship between the predictor variable, ACCESS for ELLs reading scaled score and the criterion variable, ACT reading sub-score for 11th grade English Language Learners.

$H_0$3: There is no statistically significant predictive relationship between the predictor variable, ACCESS for ELLs reading scaled score and the criterion variable, ACT mathematics sub-score for 11th grade English Language Learners.

Participants and Setting

Population

The participants in this archival study were drawn from a sample of 11th grade English Language Learners in a medium sized school district in the foothills of North Carolina during the 2014-15, 2015-16, 2016-17, and 2017-18 school years. Archival data for North Carolina is handled by the NC Education Research Data Center in partnership with the Department of Public Instruction. The school district resides in a county that is considered economically distressed by the North Carolina Department of Commerce based on population, average unemployment rate, median household income, percentage growth in population, and adjusted property tax base per capita. The district contains seven high schools, five traditional and two non-traditional, serving approximately 5300 students. Each of the seven high schools is classified as Title 1 schools (NC Department of Public Instruction, 2018).

Sample

Archival data from the 2014-15, 2015-16, 2016-17, and 2017-18 school years was used in this study. A sample of 96, 11th grade English Language Learners from the district's seven high schools will be used. According to Gall, et al. (2007), correlational studies require a minimum sample of 66 participants for a medium effect size with a statistical power of .7 at the .05 alpha

level. 60 males and 36 females were administered the ACCESS and ACT tests during the aforementioned school years. Ethnicities represented in the sample are 26 Asian, 65 Hispanic/Latino, and 5 White. Most participants identified Spanish as their primary language, 66.7%. Other primary languages included 27.1% Hmong and 6.3% other. Demographic information is represented in Table 1, Table.2, and Table 3.

Table 1

Student Gender

	Frequency	**Percent**
Male	60	62.5
Female	36	37.5
Total	96	100

Table 2

Student Ethnicity

	Frequency	**Percent**
Hispanic	66	67.7
White	5	5.2
Asian	26	27.1
Total	96	100

Table 3

Native Language

	Frequency	Percent
Spanish	60	62.5
Hmong	36	37.5
Other	6	6.3
Total	96	100

Instrumentation

This study used archival data from the 2014-15, 2015-16, 2016-17, and 2017-18 school years. Two instruments were used in this study. The first instrument was the Assessing Comprehension and Communication in English State-to-State for English Language Learners 2.0 Online test (ACCESS for ELLs) reading scores which will measure the predictor variable. The second instrument was the American College Test (ACT) composite score and reading and mathematics subtest scores, that will measure the criterion variable.

ACCESS

The Assessing Comprehension and Communication in English State-to-State for English Language Learners test (ACCESS for ELLs) was primarily developed under the direction of the Center for Applied Linguistics (CAL) and launched in 2005 with the purpose of assessing social and general academic language (Fox & Fairbairn, 2011). ACCESS for ELLs 2.0 Online is administered via computer or similar device to ELLs in small groups and is a semi-adaptive assessment based on the number of correct responses. Reliability data reflects that ACCESS for

English Language Learners has been field-tested and critically reviewed for listening, speaking, reading, and writing to ensure students are assessed based on WIDA standards (WIDA, 2014). Reliability (Cronbach's alpha) for grades 9-12 was 0.951 (Center for Applied Linguistics, 2017). Validity refers to the "appropriateness, meaningfulness, and usefulness of specific inferences made from test scores" (Gall, et al., 2007, p.151). ACCESS for ELLs has been evaluated using an argument-based validity framework and supports claims about test scores and proficiency level descriptions obtained through this assessment (Center for Applied Linguistics, 2017). ACCESS for ELLs is an adaptable, criterion referenced assessment that requires students to answer a variety of questions in three modes: multiple choice (listening and reading), orally constructed responses (speaking), and written constructed responses (writing) (WIDA Consortium, 2011). The number of questions varies based on the number of correct responses in each domain: reading, listening, speaking, and writing. Composite scale scores range from 100-600 and are linked with the English proficiency level.

ACT

The American College Test (ACT) was developed in 1959, and is based on the high school curriculum, test information/skills, and College and Career Readiness Standards (ACT, 2018). The ACT is a norm-referenced assessment administered six times each year and includes four required subtests (English, reading, mathematics, and science) as well as an optional writing test. Scores for each subtest range from 1 to 36 and the composite score is obtained by averaging the four subtest scores. Reliability of ACT is shown using median Cronbach's alpha statistics of 0.92 for English (75 items), 0.91 for mathematics (60 items), 0.87 for reading (40 items), 0.85 for science (40 items), and 0.94 for the composite score (215 items) (ACT Technical Manual, 2014). Benchmarks for college readiness in typical first courses of English Composition, College

Algebra, Social Sciences, and Biology were identified in a 2005 study to establish test validity (Allen, 2013).

Procedures

Before research began, approval for the study was obtained from the district's Superintendent or designee and IRB (see Appendix A and Appendix B). The researcher obtained ACCESS for ELLs and ACT scores for each student in the district for school years 2014-15, 2015-16, 2016-17 and 2017-18, through a request made to the NC Education Research Data Center. ACCESS for ELLs testing occurred for each 11th grade English Language Learner during the month of February each school year. All 11th grade students in the district were administered the ACT at the end of February or first of March each school year.

Each school in the district administered the ACCESS for ELLs test to identified English Language Learners during the month of February each year. The administration followed specific protocol and procedures as prescribed by the *ACCESS for ELLs® 2.0* administrator's manual. Testing was conducted in small groups, with each group completing all required tests in a single day. *ACCESS for ELLs®* 2.0 Online is a semi-adaptive assessment, therefore, test time and number of items vary based on number of correct responses. Each online administration requires 15-20 minutes (depending on group size) for convening/dismissing students and test setup (launch and login). Listening, reading, and writing domains require approximately 5 minutes for test directions and student practice. The speaking domain requires up to 10 minutes for test directions. Actual test time for listening is up to 40 min, reading is up to 35 minutes, speaking is up to 30 minutes, and writing is up to 65 minutes. The listening and reading tests were administered first, due to performance on these domains determining the placement into

"tiered" form of the speaking and writing assessments (Board of Regents, 2018). Once tests were taken, collected and evaluated, scores were placed in the database at district office, then finally housed at the North Carolina Educational Research Data Center.

ACT administration follows a specific protocol as prescribed by the ACT administrators manual. Test administrators and proctors were trained by district officials prior to test administration. The ACT composite score is derived by averaging four subtest scores (reading, mathematics, science, and English). The reading subtest has 40 items and is 35 minutes in length. The math subtest has 60 items and is 60 minutes in length. The science subtest has 40 items and is 35 minutes in length. The English subtest has 75 items and is 45 minutes in length. After scores are returned from ACT they are placed into a database in the district's accountability office.

After all scores were entered into databases located in the district's accountability office and shared with NCDPI for the school years 2014-15, 2015-16, 2016-17 and 2017-18, the researcher requested data from the two variables as well as demographic information from the NC Education Research Data Center (NC ERDC). The researcher received data that had already been stripped of any identifying information, masked, and formatted. The data was then scanned, cleaned, and entered into SPSS for further analysis.

Data Analysis

The purpose of this predictive correlational study was to examine if ACCESS reading scaled scores can predict ACT composite scores and reading and mathematics subtest scores, using data obtained from the study district during the 2014-2018 school years. This study attempted to determine if the dependent variables of ACT composite and subtest scores can be predicted by the independent variable of ACCESS scaled reading scores. Each null hypothesis

will be tested using a bivariate linear regression. Bivariate linear regression is appropriate when investigating the effect of a quantitative predictor variable (ACCESS reading scaled scores) on the criterion variable (ACT composite and subscores) (Warner, 2013).

Prior to beginning bivariate regression analysis, data was screened for inconsistencies and errors. Additionally, three assumption tests were performed. To test for the assumption of bivariate outliers, scatter plots were created between the predictor and criterion variables. Scatter plots provide a way to look for extreme bivariate outliers. Scatter plots were also used to test the assumption of linearity since the relationship between the predictor and criterion variables are assumed to be linear. The shape of the scatter plots was assessed to test the assumption of bivariate normal distribution. The researcher was looking for the presence of the classic "cigar shape" (Warner, 2013).

Once all assumption tests had been completed, the bivariate regression analysis was conducted to determine if a significantly positive relationship exists between the ACCESS reading scaled scores and the ACT composite and subtest scores in reading and mathematics. The results of the analysis provided a correlation coefficient which indicated the strength of the relationship between the predictor and criterion variables. The bivariate regression analysis was repeated for each null hypothesis. Descriptive statistics consisting of the mean, standard deviation, and range were also calculated on the predictor and criterion variables.

Multiple bivariate linear regression analyses were performed; therefore, a Bonferroni correction was necessary to guard against a Type I Error. Three linear regressions required that the alpha level be reduced to $p < 0.0167$ or approximately $p < 0.02$ when rounded to the nearest hundredth, based on $0.05/3 = 0.0167$ (Warner, 2013).

CHAPTER FOUR: FINDINGS

Overview

English Language Learners are the fastest growing subgroup within America's public schools (National Center for Education Statistics, 2017; National Council of Teachers of English, 2008). Despite language barriers, ELLs are required by most states to engage in all statewide assessments and in some states national assessments like the ACT. This is the case in North Carolina. However, no studies exist that examine the relationship between English language proficiency and college readiness tests like the ACT. The purpose of this predictive correlational study was to determine if an English Language Learner's ACT composite score and reading and mathematics subtest scores can be predicted by the reading scaled score obtained from the Assessing Comprehension and Communication in English State-to-State for English Language Learners (ACCESS for ELLs). This chapter presents demographic information reflected in the sample of 96 11th grade English Language Learners, results of assumption testing, and findings from the analysis of data.

Research Question(s)

RQ1: To what extent can ACCESS for ELLs reading scaled score of 11th grade English Language Learners in North Carolina predict a composite ACT score?

RQ2: To what extent can ACCESS for ELLs reading scaled score of 11th grade English Language Learners in North Carolina predict a reading ACT subscore?

RQ3: To what extent can ACCESS for ELLs reading scaled score of 11th grade English Language Learners in North Carolina predict a mathematics ACT subscore?

Null Hypothesis(es)

$H_0$1: There is no statistically significant predictive relationship between the predictor variable ACCESS for ELLs reading scaled score and the criterion variable, ACT composite score for 11th grade English Language Learners.

$H_0$2: There is no statistically significant predictive relationship between the predictor variable, ACCESS for ELLs reading scaled score and the criterion variable, ACT reading sub-score for 11th grade English Language Learners.

$H_0$3: There is no statistically significant predictive relationship between the predictor variable, ACCESS for ELLs reading scaled score and the criterion variable, ACT mathematics sub-score for 11th grade English Language Learners.

Descriptive Statistics

The mean and standard deviation for the predictor and criterion variables were gathered, as shown in Table 4.

Table 4

Descriptive Statistics

Variable	*N*	Mean	Std. Deviation
ACCESS Reading Scaled Score	96	387.54	32.19
ACT Composite Score	96	12.57	1.96
ACT Reading Subscore	96	11.89	3.26
ACT Mathematics Subscore	95	14.55	1.52

Results

Data Screening

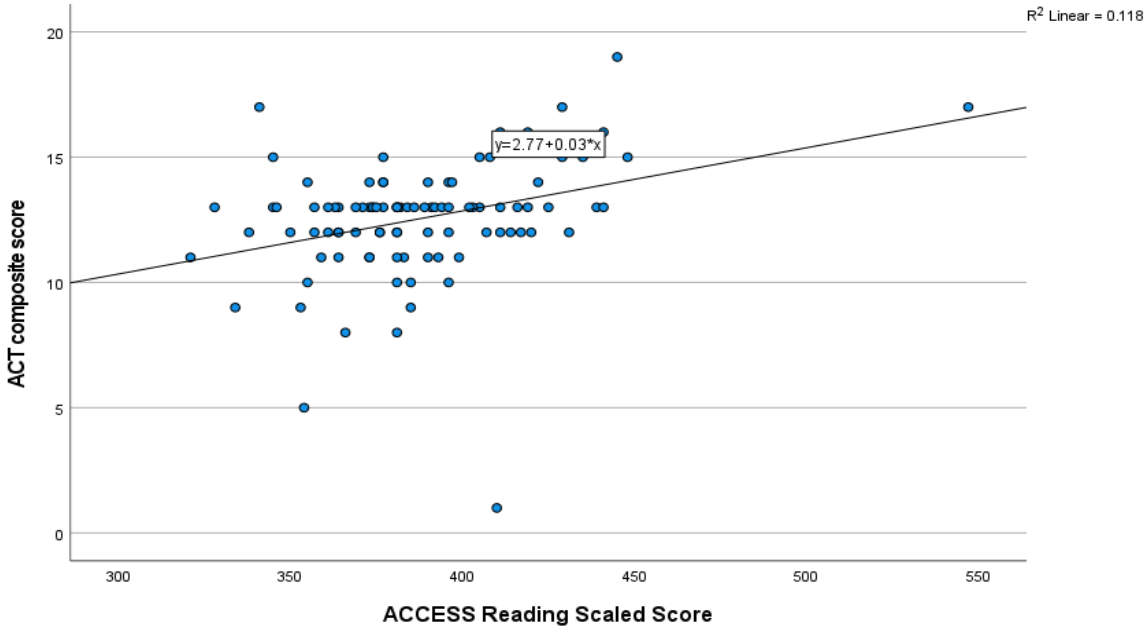
The data were screened for missing data and inconsistencies. Two records in the original data set were missing either the criterion variable or the predictor variable. These records were removed prior to analysis.

Assumption testing, Null Hypothesis One ($H_0$1)

A bivariate linear regression was chosen to analyze null hypothesis one. To ensure a bivariate linear regression was the appropriate statistical analysis for this data set, three assumption tests were performed. To assess linearity and to identify the presence of bivariate outliers, a scatterplot of ACT composite scores against ACCESS reading scaled scores with a superimposed regression line was plotted as shown in Figure 1. Visual inspection of the scatterplot indicated a linear relationship between the variables. One outlier was identified, however no appreciable difference was detected in the results, so the researcher elected to keep the outlier. Further inspection of the scatterplot indicated a relative normal distribution revealed in the ‘cigar-shape’ of the distribution.

Figure 1

Scatterplot of ACCESS reading scaled score vs ACT composite score



Null Hypothesis One ($H_0$1)

Having satisfied the assumption tests, a bivariate linear regression was conducted using SPSS for the first null hypothesis ($H_0$1). This hypothesis stated that there is no statistically significant predictive relationship between the predictor variable ACCESS for ELLs reading scaled score and the criterion variable, ACT composite score for 11th grade English Language Learners. There was a statistically significant, moderate positive correlation between an ELL's composite ACT score (M = 12.57, SD = 1.96) and their ACCESS for ELLs reading scaled score (M = 387.54, SD = 32.19), see Table 5; therefore, the researcher rejected null hypothesis one. ACCESS reading scaled scores statistically significantly predicted ACT composite scores, F(1, 94) = 12.64, p < .001, accounting for 11.8% of the variation in ACT composite scores with adjusted R^2 = 10.9%, a small effect size according to Warner (2013). Table 5 summarizes the regression analysis for ACCESS reading scaled score predicting the ACT composite score. The derived regression model is $Y_{\text{ACT composite score}} = 0.025X_{\text{ACCESS reading scaled score}} + 2.775$, with a 95% confidence interval of this slope being .011 to .040.

Table 5

Coefficients

Model	*B*	*SE B*	*B*
Constant	2.775	2.757	
ACCESS Reading Scaled Score	.025	.007	.344

Dependent Variable: ACT composite score

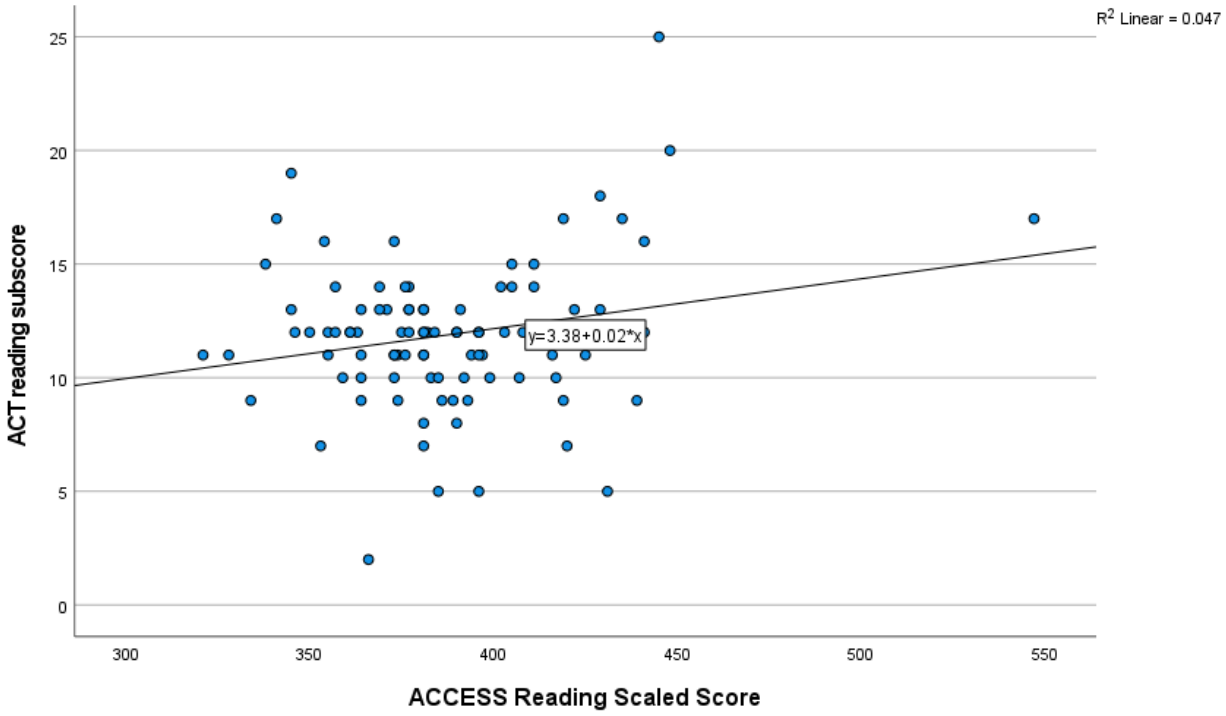
$R^2 = .019$ ($p < .001$)

Assumption Testing, Null Hypothesis Two ($H_0$2)

A bivariate linear regression was chosen to analyze null hypothesis two. To ensure a bivariate linear regression was the appropriate statistical analysis for this data set, three assumption tests were performed. To assess linearity and to identify the presence of bivariate outliers, a scatterplot of ACT reading subscores against ACCESS reading scaled scores with a superimposed regression line was plotted as shown in Figure 2. Visual inspection of the scatterplot indicated a linear relationship between the variables. One outlier was identified; however, no appreciable difference was detected in the results, so the researcher elected to keep the outlier. Further inspection of the scatterplot indicated a relative normal distribution revealed in the ‘cigar-shape’ of the distribution.

Figure 2

Scatterplot of ACCESS reading scaled score vs ACT reading subscore



Null Hypothesis Two ($H_0$2)

Having satisfied the assumption tests, a bivariate linear regression was conducted using SPSS for the second null hypothesis. This hypothesis stated there is no statistically significant predictive relationship between the predictor variable ACCESS for ELLs reading scaled score and the criterion variable, ACT reading subscore for 11th grade English Language Learners. There was not a statistically significant correlation between an ELL's ACT reading subscore (*M* = 11.98, *SD* = 3.26) and their ACCESS for ELLs reading scaled score (*M* = 387.54, *SD* = 32.19) since the analysis determined a p-value of 0.034. Therefore, the researcher failed to reject null hypothesis two.

Table 6

Coefficients

Model	*B*	*SE B*	*β*
Constant	3.377	3.961	
ACCESS Reading Scaled Score	.022	.010	.217

Dependent Variable: ACT reading subscore

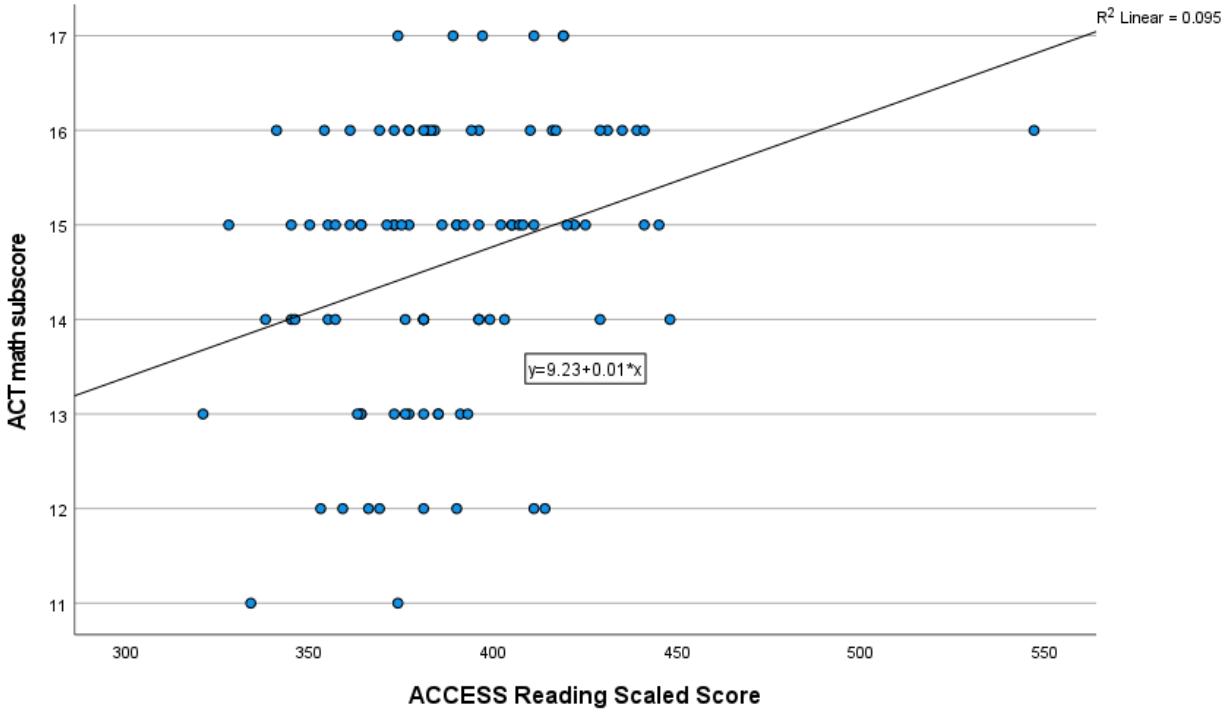
R^2 = 3.7% (p = .034)

Assumption Testing, Null Hypothesis Three ($H_0$3)

A bivariate linear regression was chosen to analyze null hypothesis three. To ensure a bivariate linear regression was the appropriate statistical analysis for this data set, the researcher again preformed the three assumption tests. To assess linearity and to identify the presence of bivariate outliers, a scatterplot of ACT mathematics subscores against ACCESS reading scaled scores with a superimposed regression line was plotted as shown in Figure 3. Visual inspection of the scatterplot indicated a linear relationship between the variables. One outlier was identified and was removed from the data set before further analysis. Inspection of the scatterplot indicated a relative normal distribution revealed in the 'cigar-shape' of the distribution.

Figure 3.

Scatterplot of ACCESS reading scaled score vs ACT mathematics subscore



Null Hypothesis Three ($H_0$3)

Having satisfied the assumption tests, a bivariate linear regression was conducted using SPSS for null hypothesis three. This hypothesis stated that there is no statistically significant predictive relationship between the predictor variable ACCESS for ELLs reading scaled score and the criterion variable, ACT mathematics subscore for 11th grade English Language Learners. There was a statistically significant, weak positive correlation, $R = 0.308$, between an ELL's ACT mathematic subscore ($M = 14.55$, $SD = 1.52$) and their ACCESS for ELLs reading scaled score ($M = 387.54$, $SD = 32.19$); therefore, the researcher rejected null hypothesis three. ACCESS reading scaled scores statistically significantly predicted ACT mathematics subscores, $F(1, 93) = 18.91$, $p = .002$, accounting for 9.5% of the variation in ACT mathematics subscores with adjusted $R^2 = 8.5\%$, a medium effect size according to Warner (2013). Table 7 summarizes the regression analysis for ACCESS for ELLs predicting the ACT mathematics subscore. The derived regression equation predicting ACT mathematics subscores is $Y_{\text{ACT mathematics subscore}} =$

$.014X_{\text{ACCESS reading scaled score}} + 9.228$, with a 95% confidence interval of this slope being .005 to .023.

Table 7

Coefficients

Model	*B*	*SE B*	*β*
Constant	9.228	1.724	
ACCESS Reading Scaled Score	.014	.004	.308

Dependent Variable: ACT math subscore

$R^2 = .085$ (p = .002)

Summary

A sample of 96 11th grade English Language Learners within a medium-sized school district in North Carolina took both the ACCESS for ELLs English proficiency assessment and the ACT during the 2014-2018 school years. This study set out to determine if the ACCESS for ELLs reading scale score could predict the ACT composite score, reading subscore, and mathematics subscore. The researcher conducted a bivariate linear regression analysis on the predictor variable, ACCESS for ELLs, and the criterion variables, ACT composite score, ACT reading subscore, and ACT mathematics subscore. Sufficient evidence was present to reject null hypothesis one and three and conclude that ACCESS for ELLs reading scaled score ($M = 387.54$, $SD = 32.19$) did statistically predict ACT composite score ($M = 12.57$, $SD = 1.96$), $F(1, 94) = 12.64$, $p < .001$ and ACT mathematics subscore ($M = 14.55$, $SD = 1.52$), $F(1, 93) = 18.91$, $p = .002$.

CHAPTER FIVE: CONCLUSIONS

Overview

This chapter will discuss the findings from the data analysis of the three research questions and relate these findings to the current literature. Further, this chapter will discuss the implications and significance of the results for students, teachers and districts, as well as limitations of the study. Recommendations for future research will also be provided.

Discussion

The purpose of this predictive correlational study was to determine if a predictive relationship exists between an English language learner's language proficiency score as measured by their ACCESS for ELLs reading scaled score and their composite and subscores in mathematics and reading obtained on the ACT. The predictor variable for this study was the ACCESS for ELLs reading scaled score; this variable was a measure of English language proficiency. The criterion variables were the ACT composite score, and the reading and mathematics subscores. Participants in this study were 11th grade students from a medium-sized school district in North Carolina who were identified as English Language Learners during the 2014-2018 school years. These 96 participants took both the ACCESS for ELLs language proficiency assessment and the ACT during their junior year.

This study sought to address a substantial gap in the literature related to language proficiency and the ACT. Research examining relationships between language proficiency and achievement on standardized tests is limited. The majority of relevant research utilizes samples from elementary or middle school populations and relates language proficiency to achievement on standardized reading and mathematics assessments (Lubienski & Lubienski, 2006; Polat, et al., 2016). Additionally, the relevant research addresses language proficiency and other

indicators of academic success, primarily measured by GPA (Krausz et al., 2005; Light et al., 1987; Maritirosyan et al., 2015).

The American College Test (ACT) is quickly becoming a more popular assessment of college and career readiness (CCR) for students exiting high school. This is largely due to the CCR benchmarks that have been identified by the ACT over a variety of subject areas (White, et al., 2016). The ACT, or the SAT, is used by most post-secondary institutions as at least a portion of their application process (Lazarus & Thurlow, 2016; Muniz, 2018). It is used by states and individual school districts as an indicator of academic achievement of students in their reporting of CCR to the federal government as part of the requirements of the Every Student Succeeds Act (2015). In the case of North Carolina, all students, regardless of their language proficiency, are required to take the ACT as a junior in high school. After examination of current literature, the researcher found that no studies had been conducted directly addressing language proficiency and college and career readiness assessments like the ACT. Therefore, this study is significant because it contributes to the broader knowledge base surrounding an English language learner's language proficiency and how it manifests in results of standardized, sometimes 'high-stakes,' college and career readiness assessments.

Finding from hypothesis testing identified a predictive relationship for two of the three research questions. Research question one examined: to what extent can ACCESS for ELLs reading scaled score of 11th grade English Language Learners in North Carolina predict a composite ACT score? The results of the hypothesis testing for research question one revealed a predictive relationship between the ACCESS for ELLs reading scaled score and the ACT composite score for English Language Learners. The data collected for this research question was analyzed using a bivariate linear regression between the ACCESS for ELLs reading scaled

score, the predictor variable, and the ACT composite score, the criterion variable. The results of the data analysis supported the rejection of the first null hypothesis since the analysis indicated a statistically significant predictive relationship between the two variables. Although significant, the relationship is only moderately strong. Results indicate that ACCESS for ELLs reading scaled scores account for only 11.8% of the variation in ACT composite scores, a small effect size.

Research question two asked: to what extent can ACCESS for ELLs reading scaled score of 11th grade English Language Learners in North Carolina predict an ACT reading subscore? Analysis of data did not support rejecting null hypothesis two. The data collected for this research question was analyzed using a bivariate linear regression between the ACCESS for ELLs reading scaled score, the predictor variable, and the ACT reading subscore, the criterion variable. The results of the hypothesis testing for research question two did not reveal a statistically significant predictive relationship between the ACCESS for ELLs reading scaled score and the ACT reading subscore for English Language Learners.

Research question three inquired: to what extent can ACCESS for ELLs reading scaled score of 11th grade English Language Learners in North Carolina predict a mathematics ACT subscore? The results of the hypothesis testing for research question three revealed a predictive relationship between the ACCESS for ELLs reading scaled score and the ACT mathematics subscore for English Language Learners. The data collected for this research question was analyzed using a bivariate linear regression between the ACCESS for ELLs reading scaled score, the predictor variable, and the ACT mathematics subscore, the criterion variable. The results of the data analysis supported the rejection of the third null hypothesis since the analysis indicated a statistically significant predictive relationship between the two variables. Although significant,

the relationship is weakly positive. Results indicate that ACCESS for ELLs reading scaled scores account for only 9.5% of the variation in ACT composite scores, a small effect size.

The primary finding of this study was that a statistically significant relationship exists between language proficiency demonstrated by ACCESS for ELLs reading scaled score and academic achievement and demonstrated by ACT composite scores and ACT mathematics scores. These findings support the larger body of research indicating that language proficiency contributes to the academic achievement of language learners (Krausz et al., 2005; Light et al., 1987; Maritirosyan et al., 2015; Stoynoff, 1997). However, the predictive power of the specific relationships between ACCESS reading scaled scores and ACT composite and math subscores, were weak. This appears to indicate that there are numerous factors at work in the development of language and in success of ELLs on high-stakes testing.

Vygotsky's sociocultural learning theory reminds this researcher that cognitive development occurs as a result of engagement with others who have more experience with a particular construct. For an English language learner, collaborative interactions with others in both social and academic contexts provides opportunities for development of language through internalization and mediation (Eun, 2016). The impact of these academic interactions will be influenced by numerous factors including: the amount of English spoken at home, the age a student arrives in an English-speaking school setting, and a student's literacy in their first language (Roessingh & Douglas, 2012). Therefore, the development of academic language, like that found on the ACT, will be influenced by these same factors, and requires a lengthy process where knowledge is facilitated and constructed through active engagement with authentic learning experiences (Campbell, et al., 2014; Roessingh & Douglas, 2012). It is important to note that although ACCESS for ELLs reading scaled score does offer some predictive merit for

achievement on the ACT, it should be examined in light of the total student.

A secondary finding was that the ACT college and career readiness (CCR) benchmark as defined by the state of North Carolina was achieved by four students in the sample: only one each school year. North Carolina identifies a college and career ready graduate as one who scores a composite score of 17 on the ACT. According to the legislation, each of the remaining 92 students in the sample would be required to participate in a mandated remediation program in reading and/or mathematics facilitated by community college faculty (Keaveney, 2016). Failure of students to achieve CCR indicates a lack of academic language development. Proficiency with academic language requires a process of development that is much longer than that of social language (Roessingh & Douglas, 2012; WIDA, 2014). According to WIDA, students who score a level 4 or higher on the ACCESS for ELLs assessment can successfully function within the regular classroom (Board of Regents of the University of Wisconsin System, 2012). However, findings in this study indicate 75% of the participants scored below the level 4 benchmark implying they would not be successful in the regular classroom setting without accommodations or Sheltered Instruction due to the lack of academic language (Shin, 2018). This leads to the supposition that the participants would not achieve the college and career readiness benchmark on the ACT: an academic language laden achievement test. This finding contributes to previous research identifying significant gaps in achievement among ELLs when compared to their English-speaking peers (Capraro et al., 2009; Lubienski & Lubienski, 2006; Polat et al., 2016).

Implications

As the population of English Language Learners continues to grow in North Carolina, state and district officials must explore avenues for ways to improve ELL achievement on the ACT. The minimum composite score that must be achieved to be considered college and career

ready is a 17, while the math benchmark is a 22. The composite score benchmark was only obtained by four students in the current study. The mathematics benchmark was not reached by any of the ELLs in the sample. Measures, such as increasing Sheltered Instruction in core curriculum areas (not just those with reported EOC tests), must be taken by school districts and individual schools to mitigate the gap in achievement.

One option for closing the gap is to secure accommodations for qualified English Language Learners. ACT provides the following accommodations for ELLs providing the appropriate documentation: extended time, translation of directions into 18 different languages, approved bi-lingual word-to-word dictionaries, and testing in smaller groups. Previous research has indicated that bi-lingual word-to-word dictionaries was the only accommodation that was statistically significant in improving an English learner's achievement (Kieffer et al., 2009). However, due to the documentation requirements, this accommodation is not normally provided, especially during a district administration of the ACT. District and school officials must incorporate bi-lingual dictionaries as part of the normal ELL accommodations in all content areas for this to be an option for students on the ACT.

Limitations

A limitation of this study is the size of the sample. With only 96 participants from a single suburban district, it is impossible to draw generalizations for the entire population of English Language Learners in North Carolina who participate in the ACT. Increasing the size of the sample to include multiple districts from all areas in the state would provide a more comprehensive assessment of how predictive ACCESS reading scaled scores are.

Secondly, this study only addresses one indicator of language proficiency, ACCESS reading scaled scores, in the prediction of ACT achievement. It certainly does not address the

numerous factors that influence language development and proficiency, such as age entering an English-speaking school, proficiency in the first language, time within quality ESL instruction, etc. In order to provide a more substantial milieu for the relationship of language proficiency and ACT achievement, these factors should be considered.

A third limitation of this study is that it does not address the use of accommodations by the participants; either due to ELL identification or exceptional children's placement. Likewise, it does not address that if provided, the accommodations were utilized by the participants. Since research has indicated that certain accommodations influence performance of ELLs on assessments, inclusion of the use of accommodations would provide greater context in the interpretation of results.

Finally, this study is limited in its design. This study identified two predictive relationships between ACCESS for ELLs reading scaled score and ACT composite and mathematics subscores. It could not identify a direct cause and effect relationship between a language proficiency score (ACCESS) and achievement (ACT composite/subscore). While predictive correlational studies provide insight into how one variable predicts another, they cannot identify causation. Therefore, no claim as to cause and effect can be made.

Recommendations for Future Research

The findings from this study, while addressing a significant gap in the literature, reveal the necessity for additional research addressing the relationship of language proficiency and ACT achievement of English Language Learners. Some suggestions for future research are listed below.

1. Extend the current study to include a sampling of urban, suburban, and rural districts throughout North Carolina.

2. Consider a mixed-methods study that would include reflection on other factors influencing language development and proficiency, such as: time in ESL programs, amount of English spoken in the home, age arriving in English speaking school, etc.
3. Consider a comparative study of ACT composite/subscores between ELLs who are provided accommodations like bi-lingual dictionaries, and those receiving no accommodations.

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APPENDIX A

Matthew W. Stover, Ed.D.
Superintendent

[redacted] County Schools
Engage. Inspire. Empower.

DeAnna C. Finger
Asst. Superintendent
Curriculum & Instruction

L. Chris Gibbs
Asst. Superintendent
Human Resources

Dan R. Moore
Asst. Superintendent
Operations

April 15, 2020

To: Kimberly Nye
Liberty University

From: IRB Committee
[redacted] County Schools

RE: Application to Conduct Research in [redacted] County Schools

Dear Kimberly,

Your request to conduct the following human participant research study in [redacted] County, *ACCESS Scaled Scores as a Predictor of ACT Composite and Subtests for English Language Learners in North Carolina* was reviewed and has been approved by the [redacted] County Schools Institutional Review Board. All data as part of this research study will be masked and provided by the North Carolina Department of Public Instruction. The NCDPI will send the requested information directly to the research participant. The following members agree to accept this proposal and ask that you submit your findings for their consideration once the research has concluded.

[redacted]
Dana Greene, Ed.D.
Director EL and Dual Language
4-15-20
Date

[redacted]
Brad Arrowood, Ed.D.
LEA Testing Coordinator
4-27-2020
Date

[redacted]
DeAnna Finger
Assistant Superintendent
4-27-20
Date

[redacted]

APPENDIX B

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

July 9, 2020

Kim Nye
Meredith Park

Re: Modification - IRB-FY19-20-94 English Proficiency As A Predictor of ACT Scores: A Predictive Correlational Study

Dear Kim Nye, Meredith Park:

The Liberty University Institutional Review Board (IRB) has rendered the decision below for IRB-FY19-20-94 English Proficiency As A Predictor of ACT Scores: A Predictive Correlational Study.

Decision: No Human Subjects Research

Thank you for submitting your revised data security plan for our review and documentation.

Thank you for complying with the IRB's requirements for making changes to your study. Please do not hesitate to contact us with any questions.

We wish you well as you continue with your research.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office