ONE ACADEMIC ENGLISH FOR ALL:

A STUDY OF THE CUEING SYSTEMS USED IN READING ACADEMIC TEXTS

By

KELLY ILENE BOGGS CORY

Bachelor of Science Elementary Education
Oklahoma State University
Stillwater, OK
1984

Master of Arts TESL
Oklahoma State University
Stillwater, Ok
1991

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Dissertation Approved:

Dr. Jennifer Yong Sanders
Dissertation Adviser

Dr. Pamela U. Brown
Committee Member

Dr. Qiuying Wang
Committee Member

Dr. Carol Moder
Outside Committee Member

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Name: KELLY ILENE BOGGS CORY

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ABSTRACT

Students from low-income homes and students who are learning English as an additional language both tend to struggle with reading comprehension. This study investigates whether the reasons for the reading challenges faced by low-income students and English Learners are due to the same aspects of reading. To investigate this, this study examined the number and types of miscues created by fourth grade students at a suburban school in Oklahoma and examined student explanations for the miscues that occurred during a retrospective miscue analysis. Miscues were tallied in total, by type and by the cueing systems used to create them. In addition, explanations for the miscues that students gave during the retrospective miscue analysis were classified into categories. Students were divided into groups based on language status as either English Only (EO) or English Learners (EL). Students were also divided based on whether they come from homes above or below the median income in Oklahoma. The results showed that the EO students from low-income homes produced a far greater number of miscues than any of the other groups. In addition, the EO low-income students and the EL students from both income groups relied more heavily on visual cues than did the high income EO students. Lastly, the retrospective miscue analysis suggests a distinction in the ways that the students viewed the miscues that they created. EO students from higher-income homes often indicated that the miscues that they created were improvements on the original text by improving the word choice or fluency. On the other hand, the other groups most often blamed their miscues on mistakes like blinking, blurry eyes, or reading too quickly. This suggests that there may be differences in reader identity and confidence based on income level.

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CHAPTER I

INTRODUCTION

A brief review of educational policy

Over the past fifty years, the federal government has become more and more involved in the curriculum and educational activities of the state and local school districts. Federal government involvement began in earnest in 1965 when President Johnson signed the Elementary and Secondary Education Act (ESEA) as part of the "War on Poverty." The initial impetus for this effort was to close the achievement gap for students from homes with low socio-economic status (Jennings, 2001; Jorgensen & Hoffman, 2003; Rudalevige, 2003). President Johnson and the Senate committee cited the strong correlation between poverty and academic underachievement and made increasing academic achievement for children of poverty a priority. The ESEA was later amended to also address the needs of disabled children (PL89-750) and bilingual children (PL 90-247) (Thomas & Brady, 2005, p. 52).

Every four to six years the bill is reauthorized and each iteration has added increasing amounts of federal control over schools including mandatory student testing in 1994 and required evidence of progress and proficiency in 2001 with No Child Left Behind (Rudalevige, 2003). In addition to the elements of the ESEA, which are still in place, the government more recently developed the Common Core State Standards (CCSS), designed to establish graduation goals to help students prepare for college and careers (Council of Chief State School Officers, 2010) (CCSSO). The federal

government encouraged states to accept CCSS, creating another layer of federal involvement in the education process and moving the nation one step closer to a set of national standards for all students to attain.

Achievement Gap

Whether one agrees with the move toward national standards or not, the efforts of the government to add more and more support and greater rigor to education in order to improve the academic achievement of all students have failed to narrow the academic gap for struggling students; the academic achievement gap still exists (Feister, 2013; Reardon, 2011; Reardon, 2013; Sirin, 2005). According to analysis of the 2011 National Assessment of Educational Progress (NAEP) the reading score gap for children of color remains 25 points (Feister, 2013). According to Palardy (2008) many children from low socioeconomic status (SES) homes enter high school over three full grades behind their higher SES peers and have drop-out rates that are five times that of high-income students (National Center for Educational Statistics, 2008).

Similar results are found with students who are English learners (EL). The US Department of Education in 2011 found that only 29 percent of ELs in the eighth grade scored at the basic level or higher in reading compared to 78 percent for native English speakers, and the gap has only continued to increase over time (National Center for Educational Statistics, NCES, 2013). In addition, nearly half of the states in the US have graduation rates of less than 60 percent for EL students. The education of language minority students has become an increasingly critical area of need as the success of the US educational system will become increasingly dependent on the academic achievement of EL students as the proportion of students who speak another

language at home increases. Based on current trends, English Learners will make up 40% of the student population by 2050 (Goldenberg, 2008). In addition, many of the English learners attending schools in the United States are low income students (Breiseth, 2015; Samson & Lesaux, 2015). If research about the impact of income on student achievement (see for example, Krashen & Brown, 2005) holds true many of our EL students face compounding factors in achievement.

Reasons for Gap.

Given the fact that both students for low-income homes and EL students experience the achievement gap, it is worth investigating the reasons that the achievement gap exists. Researchers have put forth a multitude of reasons to account for the continuing achievement gap between students from middle/high SES homes and low SES and EL students. While some of the factors are specific to each group, for example the lack of awareness of American culture is specific to EL students, there are some overlapping issues for the groups. Both have limited exposure to academic English outside of school which impacts ability to access content in academic texts (Zwiers, 2007) and both have home lives that differ from those of their middle-class peers. Both groups also speak a language or a variety of language that has less social prestige than that of their mainstream peers (Craig & Washington 2006, Hoff, 2004).

Some of the other reasons given include poorer schools (Cunningham, 2002; Morse, 2000), cultural differences in approaches to literacy (Ball & Lardner, 2005), and fewer educational resources at home (Bradley & Corwyn, 2002; Constantino, 2005; Whitehurst & Lonigan, 2001). However, educators have found that there is one common factor affecting the literacy levels of both groups of learners: the challenges

created by academic English language (AEL) (August & Shanahan, 2006; Scarcella, 2003; Schleppegrell & Colombi, 2002). In other words, both students from low SES environments and students from homes where English is not spoken lack fluency in the variety of English needed to learn and achieve in academic settings and in the professional world.

Many researchers (e.g. Cummins, 1980; Duff, 2010, Nagy & Townsend, 2012; Snow & Uccelli, 2009; Zwiers, 2008) contend that academic English or Standard American English serves as a barrier for students whose home life does not reflect the language and interactional patterns of the classroom setting. Snow and Wong-Fillmore (2000) note that few children arrive at school with the ability to interpret academic texts and engage in well-structured logical discussions. Furthermore, they assert that the ability to understand and produce academic language is a problem not only for EL students but also for English only speakers (EO) who come from homes other than the traditional upper/middle-class homes. Hoff (2006) states that "lower SES and minority children underperform compared with their middle class English monolingual counterparts," and also contends that academic language skills are the cause of the achievement gap.

When children enter school, teachers have specific assumptions about how children should use language (Scarcella, 2003; Schleppegrell, 2001). There are expected or favored word choices and anticipated language patterns that fit the classroom environment. For example, in the classroom students are expected to follow the initiate-response pattern for dialog and tell narrative stories sequentially and in detail (Bailey & Huang, 2011). The language and interaction patterns of the classroom are

much more similar to those of higher income families than those of low SES homes. Students who come from middle-class, mainstream homes have the advantage of having literary experiences that are more congruent with those used in the classroom (Craig & Washington, 2006; Neuman, 2006). In the upper and middle-class homes, parents talk with their children and encourage them to engage in conversations with adults. In addition, they read to them more often, use rich vocabularies, and provide them with teaching experiences (Bradley and Corwyn, 2002).

However, not all students have access to the academic register (Bourdieu, 1977; Finegan & Biber, 2001). In homes with lower SES, there is often less time and more crowding which impacts the interactional style of parents and children. For example, much of the language interaction between parent and child serves primarily to direct behavior rather than to engage in deep conversations (Hart & Risley, 1995; Hoff, 2006). The language that is used is often less varied, less complex and composed of a smaller range of vocabulary (Hart & Risley, 1995, 2003; Hoff, 2003; Huttenlocher, Vasilyeva, Waterfall, Vevea, & Hedges, 2007).

In addition, to the impact of SES, because of the diversity of the U.S. population, there is a wide variety in the styles of English spoken in the home based on ethnicity and local community (Craig et al., 2009; Huttenlocher, Vasilyeva, Waterfall, Vevea, 2007). This can also impact interaction patterns in the classroom and academic success. (For an in-depth examination of the impact that home interaction styles can have, see the seminal work of Shirley Brice Heath, 1983). Her research and that of others demonstrates that the variety of English used in the classroom matters – even for native speakers of English. For example, in many schools the use of African American

English, a variety of English common to many African American students, can impact classroom success. Craig et al. (2009) found that the use of AAE and a lack of skill with classroom language decreased the chances of academic success for African American students. On the other hand, students who were able to transition from the African-American English (AAE) to standard American English (SAE) and use SAE on literacy tasks outperformed their peers who were not able to make that transition.

The work of the classroom demands that students have many different skills and understandings. Students are expected to be able to use language in order to describe, define, explain, justify, and give examples (Short, 1994). In addition to these traditional language functions, the increased emphasis on standards and testing has created even greater challenges for the students who are already challenged by academic language tasks. Bailey, Farnsworth and Herman (2015) describe the increased linguistic demands this way:

> "Henceforth students will need to be equipped with the linguistic acumen to take part in classroom interactions that support their deeper content learning. For example, when partnered with other students, they will need familiarity with language practices and routines to negotiate their involvement in activities, solve problems cooperatively, and discuss and support one another's ideas" (279).

The Common Core State Standards (CCSS) suggest an increase in text difficulty as measured by Lexile scores (CCSSO, 2012) and an increase from previous language and literacy demands. The CCSS call for levels of engagement in, and production of, language and literacy that go well beyond the focus on "basic skills" and often scripted curriculum that was at the heart of much of the No Child Left Behind accountability era

(Cummins, 2009; cited in Bunch, 2013). Common Core State Standards create an environment that emphasizes increasing academic demand for complex text and academic discourse. This is evidenced by the summary statement for the English Language Arts (ELA) which states, that a key shift in language arts standards includes "regular practice with complex texts and their academic language." CCSS also emphasize a greater focus on understanding and use of academic language and ask that students be able to determine the meaning and "nuances of words." Anchor standards include determining technical, connotative, and figurative meanings, and analyzing how specific word choices shape meaning or tone. All of these skills are heavily context-based and unlikely to be fostered by sentence-level practice and analysis.

The challenging language demands can be seen in all content areas of the CCSS. In mathematics, for example, Common Core Standards require children to be able to "explain correspondences between equations, verbal descriptions, tables, and graphs... justify their conclusions, communicate them to others, and respond to the arguments of others... listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments" (6–7).

While one cannot help but applaud the desire for increased academic rigor, for low SES students and EL students this means raising the bar beyond the previous academic goals with which they already struggle, and frequently fail, to meet. In addition, for EL students, this means that they must simultaneously learn how to acquire enough English to participate and learn in academic settings while also developing the knowledge and skills needed for all of the specific academic disciplines (CCSSO, 2012).

Then, they must take standardized tests that use academic language designed for native speakers of English, not EL students (Menken, 2008). These tests require them to contend with multiple genres and forms of literacy, and produce language at a level of complexity that takes multiple years to develop (Garcia & Mencken, 2006).

All of this is further complicated by the fact that many public school teachers do not even know what academic English is (Snow & Wong-Fillmore, 2000) and do not recognize the importance of teaching students the features they need to communicate effectively in academic settings (Scarcella, 2003). In fact, according to the Annenberg Institute for School Reform (Flug, 2010), reading is seldom taught as a specific school subject past the third grade. This means that as text complexity increases beginning around fourth grade (Fang, Schleppegrell & Cox, 2006), students are likely no longer being given the tools to access those increasingly complicated texts. Especially if students are not given instruction with content-based inductive learning tasks.

While it is true that a lack of exposure to academic language can be one factor in the difficulties understanding and using academic English for both EL students and students firm low SES homes, there are also differences between the EL and native speakers in the manner and amount of overall language to which students are exposed. For example, while low SES students may not have been exposed to academic language or classroom interactional styles and literacy materials, they do have English home literacy skills and oral proficiency which allows them the ability to make phonological, morphological, and word level connections to text – matching sounds and words to an existing lexicon (Verhoeven, 2000). Furthermore, low SES students may not have the same exposure to cultural events like museums, theater, or concerts that

middle-class students have, but they do have the knowledge of American culture including holidays and celebrations, institutions, foods, television and popular music – common topics for educational reading and writing in elementary schools.

EL students, on the other hand, are often given no exposure to any type of English – oral or written language at home (Valdez, 2004). In addition, EL students may have language patterns that differ from the patterns in English. For example, symbols may represent different sounds in the home language, and sentences may be constructed with different syntactic patterns. This can create challenges in trying to acquire the language and content of the classroom. Generally speaking, language learners tap into their existing language to use as a template for new language experiences (Cummins, 1980, 1981; Larson-Freeman & Long, 1991). While this template could benefit some students with similar language backgrounds, it has the potential to create miscues caused by language interference or negative transfer for many students.

Essentially, interference is the production of miscues in the use of the target language because of reliance on the mother tongue (Lott, 1983). The less fluent the individual is in the target language, the more heavily s/he relies on the native language as a source of language production rules (Beebe, 1988). Furthermore, EL students may or may not have had cultural experiences with theater, concerts, and museums, and most likely have no real familiarity with typical American traditions, culture, and interactional styles, thus creating a lack of background knowledge which further limits their ability for successful classroom experiences (Burgoyne, Whiteley & Hutchinson (2013).

EL and Poverty

One issue that confounds efforts to distinguish the effects of language minority status and low SES on academic performance is the fact that a large proportion of EL students also come from homes in poverty. While we must be careful not to stereotype, Census data (2000, 2012) shows that families of immigrants are more likely to have lower median incomes and to live in poverty. This does, of course, vary. The poverty rates for some immigrant groups are much higher than for other groups or for white populations (for example, Hmong, 37.6%; Cubans, 16.2%, US born whites, 7.9%). There are numerous variables which impact income levels for immigrant and language minority families including citizenship status, country of origin, and reasons for immigration. However, for many ELs, low socio-economic status is an additional factor in the development of AEL. Research (MacSwan, 2000) has shown that students who live in poverty typically have lower rates of achievement than students who do not.

Krashen and Brown (2005) demonstrate the profound impact that SES can have on achievement and suggest that the effect of low SES seems to have a more significant impact on academic achievement than language proficiency. Research they cited (Abedi, 2001; Brown, 2003) shows that EL students from higher income homes outperformed fluent English speakers on tests of math and generally did just as well in reading. In another study examining the academic impact of income and native language, Oller and Eilers (2002), in their study of Spanish–English bilingual children and English monolingual children in Miami, found both independent and additive effects of SES and language exposure at home on children's English language skills.

Summary of the Educational Problem

Strong academic language and vocabulary skills are an essential component of academic success. However, students who come from homes where academic language is not the dominant form of discourse face challenges in academic settings. These homes historically include students who are English learners (EL) and from families with low socioeconomic status. Because of this, these groups traditionally perform much lower on academic reading tasks than their peers who are English only or from higher socioeconomic homes.

Research Questions

The research goals are to determine how students with different SES levels and Status as English Only (EO) or English Learner (EL) students decode and comprehend academic texts and draw conclusions about ways teachers can effectively support these students in academic reading growth. Four research questions guide this investigation of students' vocabulary processing in academic texts:

- How do the number of miscues vary based on socio-economic and language status?
- How do the types of miscues vary based on socio-economic and language status?
- What variations exist in the explanations students provide for miscues based on language status?
- How do the explanations students provide for miscues vary based on SES?

In this study, I use different types of data to better understand the strategies and processes students use when reading academic texts. I used descriptive statistics drawn from the miscue analysis data. The miscue analysis procedure involves the assessment administrator listing and categorizing each of the miscues made during the student's oral reading. That data was analyzed using the miscue analysis procedure established by Goodman, Watson, and Burke (1987). Each participant was screened with the vocabulary assessment before they read the passage for miscue analysis.

The miscue analysis provided quantitative data including ratios of miscues and numbers and types of miscues. In addition, I conducted interviews using retrospective miscue analysis in order to understand the cognitive reading processes that students use when reading academic texts. The interviews were recorded and then analyzed using thematic content analysis in order to discern if there are patterns of thinking or strategy use common to specific groups of students.

Significance of the Study

As a person reads, the outside observer sees little except for the movement of the eyes and the turning of the page or the scrolling of a screen. The lack of substantial observable movement belies the multitude of invisible processes going on inside the head of the learner. Huey (1908) states that "to completely analyze what we do when we read ... would be to unravel the tangled story of the most remarkable specific performance that civilization has learned in all its history" (p. 6, cited in Arya and Feathers, 2012). Reading is an internal psychological process which is not observable to an outsider. Even with modern neurological imaging, we can see *where* things in the brain happen as we read, but never really know *what* is happening. As skilled readers

read, they discern words - regardless of font style or handwriting, determine word meanings – even with homographs or idiomatic phrases. They recognize literal meanings and make inferences and predictions. All of this goes on unseen to the outside observer. Researchers continue to search for a method for understanding the multitude of split-second processes going on as reading occurs. One method that can help clarify the process for both the researcher and the student is the process of retrospective miscue analysis (RMA). RMA is an interview procedure in which students reflect on their reading processes by listening to and analyzing the miscues they made while reading aloud. This process provides researchers with a window into the thinking and strategies a student utilizes in trying to make sense of text and has been used with a variety of students with a range of backgrounds, languages, ages and proficiencies both in L1 and L2 (see for example Almazroui, 2007; Goodman, 2015; Wang & Giles 2017; Wurr, Therurer & Kim, 2009).

Understanding whether there are different strategies being utilized in order to make meaning from an unfamiliar academic text can provide insight into the cueing systems on which students from different populations rely. This could impact the choices teachers make in determining what reading strategies and skills to teach. Effective differentiation of instruction is predicated on understanding and meeting the needs of each learner. Teachers could focus instruction on the skills that students need and spend less time on skills and strategies that learners have already mastered. If there are distinctions between different groups of learners, this could help the teacher plan small group and individualized instruction to meet those needs rather than relying

on measures of overall reading ability. This research can provide teachers with knowledge that will allow them to better serve the readers in their classrooms.

CHAPTER 2

REVIEW OF LITERATURE

Although academic success is predicated on a number of features, this review focused specifically on academic language. In particular, it examined academic English as a ritualized and privileged form of discourse that is important for success in the classroom. Secondly, I looked at the variety of ways researchers have defined academic English in an attempt to identify the critical features of the register. Next, I examined how environment outside of the classroom impacts the development of academic language. Lastly, I examined how miscue analysis can provide insight into each student's processing of academic texts and provide students with an opportunity to revalue themselves as readers and students.

Defining Academic Language

While each person likely has an idea of what is meant by the term academic English, there is great debate among experts as to exactly what constitutes the most salient features of academic English. The definitions of academic language vary from researcher to researcher and there is no consensus as to what the term actually means. Individual researchers have focused on divergent aspects of the register and identified different features as being critical for understanding and teaching in the development successful classroom discourse. An examination of the various factors and definitions can illustrate the challenges of determining the critical elements to be addressed in

order to help teachers recognize what to teach in order to facilitate students' use of this variety of English.

Features of Academic Language

One of the most common definitions of academic English simply characterizes it by the context in which it is used – where it is used and who uses it (Nagy & Townsend, 2012; Scarcella, 2003; Snow & Uccelli, 2009). For example, Nagy and Townsend define it as "the specialized language, both oral and written, of academic settings that facilitates communication and thinking about disciplinary content (92). Duff (2010) presents similar ideas stating that academic discourse is the language and communication (including genres, graphics, and registers) that are expected, cultivated, and evaluated by instructors and others in education. Bailey and Heritage (2008) divide academic language into discipline specific, the language of content areas, and school navigational language, the language of general school activities or directions. Other experts (Scarcella, 2006, 2012; Schleppegrell, 2003; Snow, 2005) feel that although defining AE by context may situate the language, it does not provide instructors with the kind of information that will allow teachers to be able to understand this discourse and help their students understand and use it. Instead, they look for other ways to explain the nature or AE. Scarcella (2003) includes place in her definition but also begins the discussion of features of academic English by describing it as "a variety or register of English used in professional books and characterized by the *features* associated with academic disciplines" (p.9) (Italics added). This leads me to the conclusion reached by some researchers that defining academic language simply by context does not help teachers know how to address the learning challenges it may pose and that describing

the specific language features involved in academic language would be more useful for instructional purposes.

This discussion and the studies into what constitutes academic language are, to some degree or another, built upon the seminal work of Jim Cummins (1981) which divided language into two realms: Basic Interpersonal Communication Skills (BICS), what is often called social language, and Cognitive Academic Language Proficiency (CALP), also called academic language. The distinction he made between these two varieties of English was based on the amount of context provided and how cognitively challenging a given task was. According to Cummins, BICS is much more context embedded and less cognitively challenging than CALP. For example, social language is based on things that one already knows: the weather, what happened over the weekend, etc. It is also frequently based on the current situation or ritualistic conversational structures like greeting an acquaintance. It often includes linguistic cues like body language, gestures, or tone of voice. On the other hand, academic language (CALP) is often removed in time and space, as with subjects like history or geography, and is based on abstract ideas such as democracy or biomes. Furthermore, it is cognitively challenging because it asks students to learn new information and extend their current levels of knowledge.

Since the initial development of this distinction by Cummins, other researchers have gone on to elaborate more specific and sometimes different features of the academic register used in the classroom. Commonly included are vocabulary, syntax, and interactional features that are typical of the classroom setting (August & Hakuta, 1997; Halliday, 1994; Snow & Uccelli, 2009). For example, Snow and Uccelli (2009)

examine academic language by looking at the interpersonal stance of the discourse, the density of the information, the diversity and the precision of the language as well as the representational or metaphorical use of language (p.119). Scarcella (2003) divides the features of academic English into the various aspects of language including lexical, grammatical, sociolinguistic, and discourse features. So for example, academic discourse requires the sociolinguistic knowledge of a range of academic genres and features of those genres. Verhoeven (2000) puts it most simply: academic English requires facility with multiple, dynamic, inter-related competencies.

Functions of Academic Language

Another method that researchers use to characterize AE is organization by language function. Language functions refer to the tasks that we perform through the use of language in specific settings. For example, we use language to express gratitude, to inform, and to ask for favors. The language used to persuade a friend differs in many ways from the language used to persuade a teacher. These are functions of language – what we use language to do. In academic settings, we expect students to do a multitude of written and oral tasks in the course of a single day. Each task or function has specific formats and vocabulary choices associated with it. This approach of classifying language based on functions and features is based on the seminal work of Halliday (1984) with his systemic functional linguistics which examines language from the perspective of the things that people require language to do.

From those beginnings, researchers have developed lists of the functions that are part of the classroom setting. For example, Short (1994) notes that in order to achieve in the classroom, students need to have facility with the common functions

required in the academic setting including explaining, describing, justifying, sequencing, comparing, and evaluating. Snow and Wong-Fillmore (2000) also include the higher order skills of inferring and inventing in their list of academic functions of language. Other academic functions include summarizing, relating, interpreting cause and effect, conducting research, and constructing argumentative essays (August & Hakuta, 1997; Dutro & Moran, 2003; Schleppegrell, 2004; Zwiers, 2007). Each one of these functions has specific reasoning and structural patterns and requires certain language combinations to fulfill them. Many researchers (e.g. Short, 1994; Snow & Wong-Fillmore, 2000) contend that explicit instruction in these structures within the content areas is critical to academic success

A synthesis definition of academic language

Academic language for my purposes involves the skills needed to read and process academic texts. This entails knowledge of the vocabulary and grammatical structures necessary to access information in an academic text. The vocabulary includes discipline specific terms like *mitosis* or *equation* as well as general academic terms like *formulate* and *infer*. These are terms that are most likely to occur in educational settings rather than in general conversation. As such, they are potentially unfamiliar to students who come from homes where a conversational register is more common. Just as there are specialized terms that are more likely to occur in academic settings, there are grammatical structures that are part of the academic register. This includes frequent nominalizations of adjectives like *applicable* into *applicability* and *infer* into *inference.*

In the current fourth grade passage, many elements of academic language are evident. First the content is decontextualized. A reading about a beaver and his dam is unlikely to be done on site in order to provide context, and, because it is designed to introduce new information, it is unlikely to contain information that is already familiar to most students. The text also includes terms more likely to occur in academic texts: content specific words such as *environment* and words more common to the general academic register such as *elsewhere.* The text also has more complex grammatical structures. For example there are syntactic structures that are common in academic texts but occur rarely in oral conversations such as passive constructions that do not name the agent such as *after the lodge is built* and *trees will have to be carried,* subject verb position reversal due to an introductory prepositional phrase used in structures like *in the middle of the pond is the beaver's lodge, and* relative clauses like *that feed on trees.*

Academic Vocabulary as a Key Feature of Academic English

In examining academic language features, one key aspect included in all discussions of academic language is academic vocabulary. Vocabulary knowledge is a critical element in academic success because of the strong link that exists between vocabulary knowledge and the ability to adequately comprehend a text (Mancilla-Martinez & Lesaux, 2010; Townsend, Filippini, Collins & Biancarosa, 2012). According to Chall and Jacobs (2003) "The high correlation of word knowledge with reading comprehension has been found consistently in the research literature from the turn of the century to the present time. Recent research from Schmitt, Jiang, and Grabe **(**2011), describes a linear relationship between vocabulary knowledge and reading comprehension which indicates that the greater the percentage of vocabulary a student

knows, the higher the reading comprehension scores. Conversely, the smaller the vocabulary range, the more challenging comprehension is. Correlations between vocabulary knowledge and reading comprehension are usually between 70% and 95% (Biemiller 1999**,** Stahl & Nagy, 2006). Neilsen, Lutke and Stryker (2011) concur and highlight the compounding effects of this correlation: “the larger the student's reading vocabulary, the better his or her comprehension, and the more one comprehends, the more one can learn new words (1). Price, Meisinger, Louwerse and D’Mello (2015) also found that vocabulary stood out as a significant contributor to comprehension – even when controlling for fluency rates. However, it is difficult to separate vocabulary from fluency, because in order for readers to comprehend a text, they must be able to automatically decode and understand between 95% and 98% of the words on the page (Hu & Nation, 2000; Laufer, 1989; Nagy & Scott, 2000; Schmitt, Jiang, & Grabe, 2011).

Because of this link between vocabulary and comprehension, students who begin school with limited vocabulary knowledge are at greater risk of poor performance in reading comprehension and overall academic achievement (Graves, 2006; Nagy, 2005). Many struggling adolescent readers, especially language learners and children from poor communities, have underdeveloped vocabulary knowledge (Buly & Valencia, 2002; Hart & Risley, 1998, 2003; Hock et al., 2009; Lesaux & Kieffer, 2010; Lesaux, Kiefer, Kelly & Harris, 2014). Students who speak a language other than English at home and students from high poverty communities often lack the abstract academic language needed for reading and comprehending academic texts in school (August & Shanahan, 2006; Goldenberg, 2011; Lesaux, et al., 2014; Mancilla-Martinez & Lesaux, 2011). In fact, this lack of academic vocabulary knowledge has been cited as a factor in

the “fourth grade slump” because at this point in schooling, vocabulary becomes more abstract, specialized and literary (Chall, 1988). This vocabulary gap affects not reading comprehension and thus, overall academic achievement. General academic word knowledge explains “considerable, unique, and significant variance in academic achievement across standardized measures and across disciplines” (Townsend et al., 2012, p. 513).

Teaching Academic Vocabulary

From a pedagogical perspective, since vocabulary knowledge impacts comprehension, increases in vocabulary knowledge can increase reading comprehension (Tannenbaum, Torgenson & Wagner, 2006). Vocabulary learning has become a major instructional focus due to the tremendous impact that a lack of academic vocabulary can have on academic achievement (Marzano, 2004; Schleppergrell, 2012; Townsend et al, 2012). However, it is important to keep in mind that all vocabulary learning is most effectively learned in context with opportunities to make multiple connections across language domains. As Schleppegrell (2012) elaborates, because academic language differs from everyday language, students must be provided with opportunities to expand their vocabulary in meaningful contexts and as part of learning experiences. Teachers are encouraged to make explicit vocabulary instruction of essential academic vocabulary a part of content learning.

Researchers have focused on determining which academic words are most important which has led to the development of a variety of lists that provide the words researchers believe that students need to know for academic success (Beck &McKeown, 1985; Coxhead, 2000; Marzano & Pickering, 2005). Beck and McKeown

(1985) developed the three-tiered system which divided words into basic vocabulary, general academic vocabulary, and discipline specific vocabulary. Coxhead (2000) developed the academic word list that contains the 570 most common English academic vocabulary terms. Marzano and Pickering (2005) developed academic word lists by content area and grade level, as did many states including the state of Oklahoma (OKSDE). These lists were created based on the enormous potential impact of academic vocabulary on achievement and are used by schools and districts across the United States as a tool for addressing academic learning. Words are, according to Nagy and Townsend (2012), tools in the "service of the functions of academic language" (p. 94). Without the appropriate tools, unlocking the meaning of a text can be a daunting task. While learning academic vocabulary alone certainly does not address all of the challenging aspects of the academic register including complex grammar and lack of background knowledge, it can improve students' comprehension of academic texts.

In addition to the importance vocabulary knowledge has in reading comprehension, academic vocabulary can serve as a starting place to increase teachers understanding of the academic register which will improve their ability to help students acquire it (Townsend, et al, 2012; Zwiers, 2007). Because academic vocabulary is a more concrete and easily definable feature of the academic register, teachers can easily grasp and immediately apply academic vocabulary. Thus academic vocabulary serves as a concrete element which can scaffold teacher understanding of the academic register (Townsend et al, 2012). As Schleppergrell (2012) states, "Every subject is taught and learned through language, and teachers, without good knowledge

about how language makes meaning in the subjects they teach, cannot provide all children in their classrooms with robust opportunities to learn" (p.416).

Academic Language as Social Capital

When we discuss academic language, it is important to realize that language is a sociocultural phenomenon (Bourdieu, 1977), and as such, it is dependent on the situation and individuals involved as to how the language will be used. Hawkins (2004) asserts that "No language exists as a general thing." Rather, language consists of "different styles of language that communicate different socially situated identities (who is acting) and socially situated activities (what is being done)" (16-17). Language, in its wide variety, serves many different purposes. The way that one speaks is an element that identifies one with a cultural group and a social status. It can identify a person as an insider or an outsider, in style or out of step, formally educated or not all simply by the words that are chosen and how they are put together. When a person speaks, it is not just that person reflected in the conversation; it is also a display of a linguistic repertoire and carries with it the interaction patterns and knowledge that are accepted, expected, and valued in their community (Kramsch, 1993). Language is thus imbued with one's socio-cultural worlds.

The classroom environment is its own social setting with expected language use and interaction patterns. Students interact with each other in small groups; teachers interact with individual students and with the class as a whole. The appropriate language for each type of interaction must be learned and practiced. As Halliday noted, the ability to operate institutionally is learned (1973). Producing institutional discourses in expected ways is not simply a matter of knowing and speaking the mother tongue.

There can be no question that there are patterns of interaction that teachers in the classroom expect and privilege including the common American classroom pattern of “initiate, respond, evaluate” in which the teacher asks a question, students answer, and the teacher evaluates the correctness of the response (Gibson, 2004). Similarly, Bailey and Huang (2011) note that even at the preschool level teachers have explicit expectations of how students should share stories. Students who produce stories with classic narrative features (orientation, complication, high point, and resolution) receive more opportunities to interact with their teachers and, thus, more opportunities for language practice. These are institutional discourse patterns are not common to all homes. Like many other institutional patterns, they must be learned.

Academic Language as a Privileged Form

Even though the language and interactional patterns at home are an essential and valuable part of identity and culture, academic English (AE) constitutes the more privileged variety of language used in classrooms and boardrooms across the United States. Duff (2010) explains that the language of the classroom is a type of discourse that is “privileged, expected, cultivated, conventionalized, or ritualized” and this discourse becomes a means of evaluation by those in educational or professional positions (175). As Duff (2010) sums it up, “academic discourse is not just an entity but a social, cognitive and rhetorical process and an accomplishment, a form of enculturation, social practice, positioning, representation, and stance taking” (170).

Academic English researchers have shown that knowledge of the register of academic English is a critical feature in academic success (Craig, Zhang, Hensel & Quinn, 2009; Gibson, 2004; Schleppegrell, 2001; Snow, 2010). Gee (2008) describes

the importance by asserting that having academic language skills privileges students who have already incorporated its features and disadvantages "students whose early language socialization has not incorporated aspects of academic language that are valued and recognized in school because they are left without the tools necessary for academic success" (pp. 68–69).

The Home/School Divide

It is critical for educators to recognize that the speech patterns children bring from home may be quite different from the language and interactional styles of the classroom (Snow & Wong-Fillmore, 2000). The language used at home may be another variety of English such as African American English (AAE) or, as in the homes of our Hispanic, Indian, and Hmong populations, a language other than English. Thus, it is important to realize that as children are learning the academic content in the classroom, they are also in the process of acquiring the appropriate "linguistic, academic, and social practices of schools, and mastery of the institutional language" (Hawkins, 2004, p. 14).

Because academic language is a type of English used in limited settings, students who come from families where academic English is not the norm are likely to experience difficulties using it. Students from low SES families and students who speak another language at home may find a mismatch between the language or dialect used at home and the one used in school (Cazden, 2001). This mismatch can affect their ability to succeed in the academic environment. Research by Craig, Zhang, Hensel & Quinn (2009) found that the use of the African American English dialect, which has distinct syntactic and morphological features, rather than the use of standard American

English (SAE) accounted for 40% of the variance in reading scores of African American children. Furthermore, Craig et al. (2009) examined the relationship between the use of African American English dialect and reading and writing scores and found that the higher the use of dialect, the lower the scores on writing. They concluded that students who "use SAE in literacy tasks will outperform their peers who do not" (p. 839). For English Leaners (ELs) the problem is a similar one. While ELs may be provided with sufficient exposure to language and have high combined language knowledge (Hoff, 2013), they may lack sufficient academic English skills to perform well in the classroom.

Socioeconomic status (SES) is another factor which can influence the variety of English spoken in the home. Roseberry-McKibbin (2013) explains that students from low SES homes enter school with a more casual register; one that is often highly reliant on context, closer to what Cummins would define as social language. This may lead to great difficulty with the kinds of decontextualized tasks that are common in the classroom. Corson (1997) has noted that because of the reliance on context, students from low SES homes may be underprepared for the level of density and abstraction used in academic texts.

Limited exposure to academic English outside of school often prevents students, such as language-minority students and students from low-socioeconomic-status (SES) backgrounds from accessing content in academic texts (Zwiers, 2007). EL students likely come from homes and communities where English is rarely spoken (United States Census Bureau, 2014) thus making the chance to interact with English-speaking peers outside of school less likely. Similarly, students from low SES homes often do not have the same language and background knowledge development activities as students from

higher income homes. In general, children from low SES homes are involved in fewer parent-child conversations and are exposed to a more restricted vocabulary and range of grammatical structures than those from higher income environments. (Bradley & Corwin, 2002; Hart & Risley, 1995; Hoff, 2003, 2006).

Strong English oral language skills are predictors of academic success. While EL students may have a wide variety of combined language experiences, a large number of EL students enter school with a level of oral English skills that is so low it interferes with their ability to experience academic success (August et al., 2010). The oral language development of children at home influences the literacy experiences a child is likely to have when entering school. These, in turn, form the basis for the development of reading skills and further language development

The distinction between the home language and the school language is even more pronounced when looking at the literacy practices related to print. Craig and Washington (2006) point out that the literacy practices of children from diverse cultural and socioeconomic backgrounds are frequently dissimilar from the literacy practices of the classrooms and students from mainstream, middle-class settings, especially when it comes to the common academic practices of reading and writing. Some examples of the differences include the number of age-appropriate books, trips to libraries, frequency of being read to, and types of interaction around books. Non-poor children of all ethnicities are much more likely to have more books and enrichment experiences than poor children (Bradley, Corwyn, Pipes-McAdoo, & Garcia-Coll, 2001; Rothstein, 2004; Whitehurst & Lonigan, 2001). Low SES students are also likely to have less access to resources like workbooks that support the skills being developed in the

classroom (Bradley & Corwyn, 2002). Academic language is fostered – in part – by exposure to academic materials. Research shows a direct connection between the resources at home and student academic outcomes (McNeil, 2000). These differences in literacy practices can have a large impact on vocabulary development and awareness of print (Rodriguez & Tamis-LeMonda, 2011).

In addition to the resources available for the development of academic language at home, family SES often determines the kind of school and classroom environment to which the student has access (Reynolds & Walberg, 1992). Low and high SES schools differ in a number of ways that impact the type of education a student receives. For example, there are differences in student-teacher ratios, amount of teacher experience, and the types of materials and instructional arrangements available (Wenglinsky, 1998; Unnever, Kerckhoff & Robinson, 2000). This impacts not only academic achievement, but overall language proficiency development as well. Children from low-SES environments may acquire language skills more slowly, exhibit delayed letter recognition and phonological awareness, and are at risk for reading difficulties (Aikens & Barbarin, 2008). Similarly, EL students who attend high-poverty schools tend to acquire English at slower rate than other ELs. (Abedi & Dietel, 2004; Hakuta et al., 2000; Jepsen & de Alth 2005).

Academic language skills are essential for classroom success. The academic English register is the privileged form of English in classrooms and boardrooms. Students who have limited exposure to academic English, speak alternate varieties of English, or have fluency in a language other than English face clear disadvantages in the classroom.

Academic Language Assessments

It is clear that academic language is closely connected to academic achievement. However, many language tests designed to measure English proficiency for placement and instructional purposes do accurately measure the necessary academic language skills. Language assessments like the Language Assessment Scale (LAS) and the IDEA Proficiency Test (IPT) measure surface language or BICS and do not measure the academic language skills necessary to succeed in school. On the other hand, the Woodcock Munoz Language Survey (WMLS) is a test of English which is more tightly connected to CALP. Although the WMLS is much more academically based, it requires not only an understanding of extensive vocabulary, but also historical and cultural knowledge. For example, it asks students to identify an old fashioned tourniquet, a candelabra, and an individual panning for gold. These tasks measure not only specialized language, but knowledge of things beyond the common experience of most American students.

There exists some debate among linguists and educators about the appropriateness of such tests which measure not only language proficiency and academic skills, but also measure specific cultural knowledge. In fact, MacSwan and Rolstad (2003) contend that by defining linguistic proficiency on the basis of such highly specialized cultural knowledge, we are creating “a linguistic dividing line which enormously privileges those with more socially valued cultural capital in hand”(329). Indeed, testing of monolingual English speaking students on all three of these assessments found that all native speakers of English passed the LAS and the IPT which measure BICS, but NONE of the native speakers were able reach the fluent level

in English on the more academic WMLS (Pray, 2005). The developers of the WMLS assert measures of academic type tasks and language are much more appropriate in academic settings and these types of tasks and language better reflect the language that students must have to succeed academically. However, the results of this assessment clearly indicate that this assessment measures much more than standard English proficiency, and that academic language proficiency is reliant on more than native language proficiency if native speakers of English cannot reach the fluent level on the assessment.

Since the passage of NCLB and Common Core, assessments of English proficiency have become more tightly connected to academic language skills. Assessments now are targeted more specifically to the language used in the content areas. For example, under the new regulations and goals of the NCLB act, the WIDA Consortium has developed a language proficiency test, the ACCESS for ELL's that is specifically designed to look for knowledge of the academic language necessary to perform tasks in math, science, social studies and English. As they describe it, "ACCESS was developed… to assess the English proficiency needed to succeed academically in U.S. classrooms based on clearly defined English language proficiency standards …across the four language domains (listening, reading, writing, and speaking) (WIDA Consortium, 2007). They emphasize it is academic language, not academic skills, that is being assessed. For example, on these assessment students are asked to identify terms like *denominator* or *safety goggles* – vocabulary that is used in typical classroom settings but not in most home environments. However, Bailey and

Huang (2011) note, it is difficult to disentangle the testing of language knowledge from the knowledge of content area knowledge or skills.

Furthermore, there is some debate as to the validity of such tests (Wolf et al. 2008). They cite studies that show students who have passed the English proficiency exams, but fail the language arts exams, and they cite other studies which show the opposite; students passing the English language arts exam and failing the English proficiency exam. While the content of these tests is not identical, both purport to measure the language ability of the EL learner. As such the correlation between these should be stronger. As Boals et al. (2015) put it, "Although the goal of ELP assessments is assessing school-based English language, the intertwined relationship between language proficiency and content knowledge presents unique issues when evaluating the validity of ELP assessments and the inferences that can be drawn from them" (p. 148). The differential performance on these assessments suggests that the skills involved are not intertwined or reflective of the academic English tasks students will be asked to perform.

Assessments that are designed to measure language proficiency measure more than just language. They are heavily reliant on background experiences and cultural knowledge that not all students have. Furthermore, it is hard to separate the language of the content areas from the knowledge of the content. Without even an agreed upon definition of what academic language is, developing assessments that accurately reflect it is bound to be problematic. Most assessments address elements of the whole like knowledge of academic vocabulary, reading comprehension of academic texts, or ability to write in an academic format. Although assessing academic language can be a

challenge, assessing multiple language skills comes closer to accurately measuring the language proficiency of EL students. Assessments designed to measure the academic language of English learner such as the ACCESS for ELLs include multiple aspects of language skills and can provide a model for future assessments.

Reading and Cognitive Processes

While specific models of reading comprehension may emphasize different elements or classify constituents in different ways, most models agree that reading comprehension involves the reader constructing a mental model of the text (Kendeou, Broek, Helder & Karlsson, 2014; Kendeou, Muis & Fulton, 2011; Sadoski & Paivo, 2007). However, creating as mental model of a text requires a multitude of interactive cognitive processes that must occur both simultaneously and successively Parrila, Das, Mahapatra, & Stack-Cutler (2010). These processes include decoding and recognition of words, holding information in short term memory, accessing the mental lexicon, scanning backwards and forwards in text, identification of relevant words and phrases, syntactic processing and inferencing based on textual cues (Clarke, Truelove & Hulme, 2013; Hruby & Goswami, 2011; Magliano, Ozuru & McNamara, 2007). The individual processes have been categorized in a number of ways including top-down/bottom up (Goodman, 1967; Gough, 1972), higher and lower level processes (Kendeou et al, 2014), and micro and macro processes (Kintsch & Rawson, 2005; Verhoeven, Reitsma & Siegel, 2010). While the specifics may vary, it is clear that reading is a complex cognitive activity requiring the activation of many separate cognitive processes.

Some of the cognitive processes involve taking in stimuli from the senses in order to process the visual information of the text. This includes the visual processing

of letters and processes that we generally refer to as decoding. Decoding, in short, is the making the connection between the written form of letters and words to the sounds of the spoken form. This includes making the connection between letters and sounds, distinguishing the individual phonemes in a word, and the connection of sight words to their oral counterpart (Hruby & Goswami, 2011; Verhoeven, Reitsma & Siegel, 2010).

In addition to the processes involved in decoding, readers must engage other linguistic processes to make sense of the written text. These processes include semantic analysis – readers must identify individual morphemes, the words and parts of words that convey meaning. Morpheme analysis serves as a tool in semantic analysis for the carrying of meaning in words, prefixes and suffixes, and in the syntactic processing of parts of speech and tense. (Nielsen, Luetke & Stryker, 2011). For example, when a student encounters a word like unimaginable, the student identifies the meaning for the root word and all of its affixes, but also recognizes that the affix *un* changes the meaning of the root word *imaginable* to its opposite. Similarly, semantic analysis is activated to identify words and phrases and to determine their meaning within a specific piece of text. This semantic analysis is critical for comprehension not only for the identification of all words in a text, but also for expressions that require specialized semantic processing as in the cases of potentially confounding words like homographs like *bat* or *table* which can have more than one meaning, two-word verbs like *look up,* and idioms like *up in the air* which have meanings as a unit which differ from the meaning of the individual constituents (Kendeou et al., 2014, Kintsch & Rawson, 2005; Verhoeven, Siegel & Reitsma, 2011). Without sufficient exposure and context discerning the meaning can be problematic for language learners.

Furthermore, readers activate the co-referents and semantic associations of vocabulary items as they read. For example, when a reader encounters a word such as *daisy* in a passage, s/he will use images and context to link it to the associated schema and make associations with the category flower and activate the words that generally occur with such words such as garden, bouquet, bunch, vase, etc... (Clarke, Truelove & Hulme, 2013; Farrall, 2012)

In addition to the linguistic processes involved in reading, multiple cognitive processes are required to move beyond identification of the individual words and phrases in the text to create meaning. As Clarke, Truelove and Hulme (2013) note, "Only part of the task of reading comprehension is situated within the text itself; a developed understanding comes from the interaction between the text and the reader's response to it. These interactive processes include making inferences in order to identify the relationships within and between sentences (Verhoeven, Siegel & Reitsma, 2011) and connecting parts of sentences to each other and relating passages within the text to each other in order to develop a coherent view of the overall meaning. Readers use sentence structure and context to make predictions about upcoming content and the meaning of unfamiliar words (Kendeou et al., 2014; Kintsch & Rawson, 2005). Text background knowledge, prior experience, and linguistic processing skills must be activated and incorporated in order to interpret the text. A person's prior knowledge affects the kinds of meanings constructed from the text information. The more prior knowledge and experience readers have with a particular topic, the easier it is for them to make connections between what they are learning and what they know and to integrate new information with existing knowledge (Anderson, 2004; Woolley, 2011).

Clearly reading comprehension is a complex activity involving multiple cognitive processes occurring interactively. Reading integrates knowledge of genre, discourse and language along with processing skills to interpret letters, sounds, words and life in rapid-fire succession unseen to the human eye. In order to improve the reading skills of students, awareness of and attention to the different processes involved in reading is critical.

Miscue Analysis

Miscue analysis is one of the main data collection procedures used in this research study to identify the processes being used to read academic texts. Miscue analysis is an informal reading inventory based on the seminal work of Kenneth Goodman (1967) which has become a widely used tool in assessing students' reading skills and strategies. The miscue analysis procedure arises from the belief that reading is a transactional process in which what the reader brings to the text in terms of knowledge, schema and experience is as important as the text itself (Keh, 2017). Wilde (2000) cited miscue analysis as a "powerful procedure for understanding the reading process and the strategies of individual readers" (p. 1). In the development of miscue analysis, Goodman redefined the reading process from one of simply decoding or reading sight words to an interactive process between the reader and the text, as he calls it, "a psycholinguistic guessing game" (p. 126). Instead, miscue analysis arises from the belief that reading is a transactional process and that the knowledge, experience and schema that the reader brings to the text is as important as the words on the page (Goodman & Marek, 1996).

Instead of reading whole words or decoding words letter by letter, Goodman (1973) asserts that proficient readers use minimal linguistic cues to confirm or reject the expectations that they forms as they process information while reading. In other words, as someone reads, s/he forms expectations based on the topic, language knowledge, background knowledge and reading experience about what kinds of words would work in that sentence or passage based on the information that has already been processed. Goodman believes that what distinguishes skilled readers from struggling ones is the effectiveness of their linguistic sampling strategies, the balancing of the linguistic cues to make accurate "guesses."

Every reader, regardless of proficiency, makes miscues as they read. The question then becomes what kind of miscues are made, what strategies underlie those miscues, and what cueing systems are being used. Miscue analysis is predicated on a psycholinguistic constructivist view of reading which asserts that reading is an active process in which the reader actively reconstructs the message from the written text. In order to do this, learners use a variety of strategies and linguistic knowledge to make sense of the written language (Davenport, 2002). The miscues that the reader makes serve as clues into the tools and techniques the reader is using to make sense of a piece of writing. According to Goodman (1973), as readers actively construct meaning, they use both a variety of reading strategies like prediction and inference while simultaneously using language cues. The use of miscue analysis has also been used extensively with EL students (see for example Almazroui, 2007; Mikulec, 2015; Wurr, Theurer, & Kim, 2009). It has been found to be an effective tool "for understanding what readers experience when reading in a first and second language" (Mikulec, 2015, p.

144). Thus miscue analysis has been found to be a valuable tool for the systematic analysis of the strategies readers from a variety of backgrounds and with reading abilities use.

Miscue analysis has been used with a wide variety of readers: children through adults, and first language and second language users (Ebe, 2008; Jerue, 2004; Kim & Goodman, 2011; Mikulec, 2015). During a miscue analysis, a student reads aloud a text and the administrator listens and audio records the reading while marking the differences, or miscues, between the written passage and the words being read. The administrator notes whether the student has substituted one word for another, has left out or inserted words, and takes note of the visual similarity between what was read orally and what was on the page. This provides the administrator with clues to discern which linguistic cues are being utilized and which cues are not being attended to. For example, miscue analysis can indicate whether the reader is relying on sound/symbol cues, or substituting words which maintain the meaning of the text, or if the reader does not understand the text at all (Beatty & Care, 2009). This process has the potential to effectively identify reader strengths and to better match students' needs with the interventions provided (Buly & Valencia, 2002; Mahlke, 2009).

Challenges in Miscue Analysis

The use of miscue analysis does have some challenges. One challenge associated with miscue analysis is the amount of time and skill involved in conducting and interpreting the analysis itself. Individual oral reading with each student is very time consuming and can take away instructional time (Serafini, 2010). There are some ways to gain critical student information that do not require the time it would take to conduct a

full class miscue analysis. Classroom teachers may choose to only perform miscue analysis with struggling students (Wilde, 2000). This allows the teacher to identify instructional foci for the students most in need of reading assistance. In addition, Davenport (2002) discusses the use of impromptu miscue analysis she calls *over the shoulder analysis* that can be a quick analysis of miscues anytime a student is involved in reading. Rather than creating a formal miscue analysis session, the teacher can invite a student to read aloud whatever text s/he is reading the teacher can look over the student's shoulder as s/he reads, write down miscues, ask questions about thought processes, discuss reading strategies and assess comprehension. If there are any interesting miscues, a quick retrospective miscue analysis session can be done right away. While obviously less thorough than a complete analysis, it can be used to discover instructional needs.

Another area of concern is the inherent assumption in miscue analysis that oral reading represents similar processes to those involved in silent reading, and that miscues detected while students are reading aloud are similar to the miscues they commit while reading silently. Trainin, Hiebert, and Wilson (2015) note that historically research has found contradictory results when comparing silent and oral reading. They cite research that found that comprehension is better with oral reading, comprehension is better with silent reading, and there is no difference in comprehension whether reading silently or orally. More recent research (Price, Meisenger, Louwerse,& D'Mello, 2015;Trainin, Hiebert & Wilson, 2015; van den Boer, Bergen & de Jong, 2014) has shown that silent and oral reading are similar processes that activate the same

underlying cognitive skills, there are a few distinctions worth considering when using oral reading alone as a reading evaluation tool.

One factor to consider is the grade of the students participating in the reading. The first area of difference is in comprehension of the text. Grade level seems to impact whether comprehension rates will be higher with oral reading or silent reading (Price, Meisenger, Louwerse, & D'Mello, 2015; Trainin, Hiebert & Wilson, 2015). The studies conduct by both sets of researchers indicates that through grade five students have better comprehension when reading orally. Trainin, Hiebert, and Wilson (2015) also found that seventh graders have better comprehension when reading silently.

Another distinction between oral reading and silent reading is the processing time. Text processing requires more time in oral reading than in silent reading (van den Boer, Bergen, de Jong, 2014; Vortius, Radach & Lonigan, 2014). These researchers hypothesize that oral reading is affected more by orthographic and phonological processing than in silent reading. Furthermore, the additional burdens of activation of the phonological codes, speech planning, and monitoring of articulation are likely responsible for the slower processing time.

Despite these distinctions, all of the researchers concur that oral and silent reading are similar processes and activate similar cognitive functions. Thus, oral reading can serve as a good indicator of overall reading ability.

Types of Miscues

According to miscue analysis, readers use four language cueing systems: *graphophonic*- what they know about sounds and letters and their interrelationship to decode words, *syntactic* - their knowledge of how the language is put together,

semantic - their knowledge of the types of words that make meaningful sense in the context, and *pragmatic*- their ability to integrate all of the other cueing systems to make sense of text. As readers interact with the text, they use these language systems as well as other cues based on environment and background experience to make sense of what they are reading (Goodman, 1973). These cueing systems are used in miscue analysis and in running records – both informal reading inventories.

The miscue analysis model maintains that the miscues that students make while reading aloud can help to determine what cueing systems they are using to interpret the text. The term miscues is used specifically to signify when "the observed response (OR) of the reader differs from the expected response (ER) based on the printed text" (Fries, 2008, p. 67). As the student makes a miscue, the teacher determines whether the miscue is a substitution, omission, or addition to the text. These types of miscues provide valuable insight into student thinking and which cueing system is being activated and relied upon. For instance, if a reader substitutes a word that is visually similar to the word on the page, perhaps it starts with the same letter or ends is in the same word family such as pronouncing *play* for *pay*, but is not semantically or syntactically appropriate, the student is using the graphophonic cues to read that word. In other words, the student uses the visual similarity to produce the word. The syntactic cueing system, on the other hand, relies more on the structural or grammatical sense of language. Does what the student reads aloud sound like something that could be said in English? For example, the student might substitute a noun for a noun in a passage and the sentence structure will remain intact because the function of the word remains the same. For instance, if the reader substitutes *she is **sitting** on the floor* for *she is*

standing *on the floor*, the sentence still conforms to rules of standard English sentence structure; however, if the reader were to say *she is* ***sit*** *on the floor* it would not conform to the English structural standard and thus is a mistake in use of the syntactic cueing system.

The last type of cueing system is semantic. The semantic system is based on creating meaning. When using semantic cues, the reader uses the context, or the other words and pictures, to predict or provide words based on what would make sense in that sentence in that specific piece of text. For example, in a sentence like," *We went riding on a* ***_____*** *"* a reader using semantic knowledge would automatically recognize the kinds of things one might ride. Then, s/he would only need to glance at the first letter to confirm the expected response. If the reader also has illustrations that represent a city, or a western scene, or a lake, s/he might use the illustration to make the prediction without really even examining the word at all. This is what Goodman would call *psycholinguistic guessing*. However, if the student were to substitute *sheep* for *ship*, the student might be relying on graphophonic and syntax cues, but s/he is not integrating the semantic system to successful identify the word.

Miscues as Insights

Each type of error shows that the reader is interacting with the text and using language skills to make sense of the reading. In other words, we begin to see how well the reader understands the language processes and is able to combine the different cueing systems in order to read most efficiently and effectively. (Goodman, 1996). As explained by Ebe (2008), "Effective readers make balanced use of the cue systems as they read, and efficient readers make minimal use of the cues as they read" (p. 134).

Understanding if a student is over relying on one cueing system over another helps teachers to know what cueing systems the student favors and which systems need to be reinforced. Thus, miscue analysis systematically examines and categorizes the miscues in order to determine the student's use of cueing systems and individual student's strengths and weaknesses (Mahlke, 2009).

There is some evidence that the types of miscues one employs are connected to reading proficiency and difficulty of text. For example, research indicates that dyslexic readers and lower proficiency readers demonstrate an overreliance on graphophonic cues (Christie, 1981; Thomas, 1978). In addition, Wolfe (2001) showed similar results for students who are reading texts that are at their frustration level. Students reading at the frustration level focused much more heavily on decoding skills – reading sound by sound and word by word - leaving little working memory to focus on actual comprehension of the text. Similarly, Laing (2002) showed that typically developing children tend to better integrate cueing systems by creating miscues that are both phonologically similar to the original text while retaining meaning, whereas students with language learning disorders were more likely to produce phonologically similar words that impacted meaning and to omit content significant words while reading aloud. Similar results were found even for readers in Chinese by Wang and Goodman (2008) who found that the more proficient readers relied more on the syntactic and semantic cues than on graphophonic relationships.

Native Language and Cueing Systems

For students learning to read in another language, reading ability and the use of cueing systems is complicated by multiple factors. One such factor is the structure of

the language itself. Decoding and literacy skills come much more easily in some languages than in others. English has a notoriously irregular pattern of sound-symbol relationships. For example, there is no guarantee that seeing the same pattern of letters, like *ough,* will result in the production of the same sound. This is what researchers have called an opaque language. Research has shown that students learning to read more transparent languages like Spanish which have strong sound-symbol consistency take less time to learn the same level of decoding skills than students learning languages like English which have more irregularities in the orthographic code (Ellis, et al., 2004; Seymour, Aro & Erskine, 2003).

In addition, beginning readers of transparent orthographies tend to make mispronunciation miscues, including the substitution or insertion of nonsense words, whereas in opaque languages like English there tend to be more whole word substitutions (Ellis et al, 2004). This suggests that readers of more transparent orthographies tend to follow a straightforward analysis of the graphemes and production of the associated phoneme – even if the results are nonsense words. On the other hand, readers of opaque orthographies tend to use a partial visual cueing system to decode the word, but also use other cueing systems to predict what the word might be. This has a strong potential impact on the reading strategies second-language learners may use when reading in the new language. For example, readers who learned to read in transparent orthographies where there are consistent sound-symbol relationships are more likely to view words as decodable and make more non-word miscues than readers from opaque orthographies (Keh, 2014), at least until they become proficient in both languages. At which point, bilinguals become more attuned to the cross-linguistic

differences and utilize different brain pathways to interpret texts based on the different types of orthographies (Oliver, Carreiras, & Paz-Alonso, 2017).

For students reading in another language, the use of cueing systems is similar to that of struggling readers reading in their native language. Not surprisingly, Ebe (2008) showed that Spanish/English bilinguals reading in their second language rely much more heavily on the graphophonic system than any other cueing system - just as struggling readers do. Given the transparent nature of Spanish, the dependence on this cueing system makes sense. Furthermore, Pritchard and O'Hara (2008) show that this reliance on word by word reading continues to occur when reading in a second language - even with fluent bilinguals.

It is important to keep in mind that the nature of the written language can also impact the strategies used. A variety of languages around the world use systems of encoding that differ from the English Roman alphabet. The most distinct writing method familiar to many are the logographic systems of many Asian languages in which characters correspond to morphemes, words, or syllables. This can affect the way that a reader approaches the reading task and the cueing systems used. As Keh (2014) noted, when a reader engages in a particular orthographic system repeatedly, this impacts the metacognitive skills that a reader develops over time. Skills that have been repeatedly used successfully tend to be repeated – even if the context is different. Furthermore, the strategies selected can also be affected by the orthographic system of the target language as well. For example, Wang and Goodman (2008) found that American readers in Chinese relied much more heavily on the syntactic and semantic

clues rather than graphophonic cues because of the lack of character-sound correspondence in written Chinese.

However, in some cases, reading proficiency seems to be more a function of the individual than of the language difference. Ebe (2008) found that there were more differences between readers than there were between languages. In other words, "readers who were more proficient in their Spanish reading were more proficient in their English reading" and students with lower proficiency in Spanish, had lower proficiency in English as well (p. 138). This provides support for the theory that first language reading proficiency has a direct impact on second language reading ability (Cummins, 1991). In fact, research cited by Huerta (2010) shows that EL readers who applied their awareness of cognates, morphology and context to infer meanings actually outperformed English only students on measures of comprehension and word skills.

Retrospective Miscue Analysis

Retrospective miscue analysis (RMA) is a procedure that developed naturally as an extension of miscue analysis (Keh, 2014). As noted previously, miscue analysis allowed teachers and researchers to examine miscues and infer the strategies that the reader was utilizing while reading. Teachers working with adolescent students felt that the insight that they had gained through the application of miscue analysis could also be used to allow students to acquire insight into their own reading processes and empower them as readers (Watson, 1978; Worsnop, 1980). During RMA students read aloud an age-appropriate text and the assessment administrator audio records the oral reading. The recording is then played back for the administrator and the student. As students listen to recordings of themselves reading aloud, readers identify places where what

was read differed from the written text and discuss with the administrator the language elements they were attending to, describe what they were thinking, and identify the strategies they were using when the miscues occurred. This allows readers to see that they do have reading processing skills in place and are, in fact, attending to the text. They come to see miscues as evidence of "their interaction with the text rather than their deviation from the text" (Keh, 2014, p 4). Case studies using RMA show that as students use this procedure, their confidence increases and miscues decrease (Goodman, Watson & Burke 2005).

Goodman (2008) sees miscue analysis as having two roles. One is as an instructional tool that allows readers to gain insight into the reading process and reflect on their own approach to the written word. Through this technique students come to see that all readers, no matter how proficient, make miscues. However, they also come to recognize that some miscues disrupt the reading process more than others. They begin to understand that just as authors make decisions in how to create a text, readers, too, make decisions about how they will reconstruct and recreate meaning from the text for themselves (Moore & Aspergren, 2001). The RMA process also enables readers to recognize and discuss the underlying logic used during the creation of their miscues (Brantingham & Moore, 2003).

The second role Goodman (2008) considers to be the role of miscue analysis is to inform both the administrator and the student about the strategies and strengths that the readers have. In this way, the assessment administrator comes to see how students react to their own miscues and how conscious they are of the processes at work while they are reading. This allows teachers to design instruction around student strengths

and avoid spending valuable instructional time on skills that are already being used effectively. In addition, it provides a way to document the development of readers' skills and attitudes toward reading (Kim & Goodman, 2012).

Although RMA was originally designed to use with struggling readers, it has value for EL students as well. First, it allows English learners to value the language knowledge and skills that they already possess (Jerue, 2004), and helps English learners to increase their awareness of English syntax, semantics, pragmatics, and sound-symbol relationships (Keh, 2014; Kim & Goodman, 2012). Furthermore, it helps language learners to see that reading is a meaning-making process regardless of language and that the skills and strategies that they apply in their native language can be applied to any other language. Because retrospective miscue analysis demystifies the process of reading in English "students revalued themselves as biliterate and bilingual language users who learn to better monitor their own reading and take control of the reading processes" (Kim & Goodman, 2012, p. 109).

As we can see, there are a variety of factors involved in the acquisition of academic discourse. Unquestionably academic discourse is essential for success in school settings. Both EL students and low SES English-only student face challenges in acquiring the academic language necessary for achievement. While the cueing systems and word attack skills are not the only element in the complex reading process, they are one of the foundations in the reading process and critical for successful reading comprehension. My research should provide some insight into the types of strategies and skills utilized by these students and provide teachers with specific insight into the

approaches used by differing types of students. This, in turn, can inform their approach to skill and strategy instruction to strengthen that foundational reading skill.

CHAPTER 3
METHODOLOGY

This study examined the use of cueing systems and word-attack strategies by students who were English Only (EO) and English Learners (EL). The students came from a variety of language groups and from different income levels. Before assessing their reading strategies, I conducted a vocabulary pretest to determine the students' familiarity and automaticity with the academic terms from the text. If they were sufficiently familiar with the terms, I then had them read aloud an academic text containing the words while I recorded their reading and performed miscue analysis and documented their miscues. The final component of the assessment was a retrospective miscue analysis in order to have students try to identify the strategies they used when making miscues during the reading. This three-part process allowed me not only to note the types of miscues each student makes, but also to gain insight from each student as to the processes each student engaged in when encountering unknown terms in an academic text.

Theoretical Perspective: Constructivism

Based on a constructivist viewpoint, language is a tool used to communicate. It is social in nature and serves to build and adapt individual and societal identities (Theurer, 2011). Reading, as with other forms of learning from a constructivist's

perspective, is a means of creating one's own knowledge. Readers are actively engaged in creating meaning as they read, utilizing their own background and linguistic knowledge. (Goodman, 1994; Richardson, 2003; Theurer, 2011). The selection of cognitive processes, personal knowledge and attitudes, and each person's interpretation of the text varies (Bruner, 1973, 1996; Tracey, 2006). Constructivist theory contends that learning occurs when individuals create meaning based on the interaction of existing knowledge with the new ideas and new knowledge they encounter (Richardson, 2003). In other words, learners use their own culture, background, and knowledge to reach their own version of understanding. Bruner (1996) contends that language and culture have a powerful influence on how we perceive and interpret the world around us. Individuals construct meaning, but culture and background are always factors in that construction. Thus, no two people experience a text or a learning experience in exactly the same way (Bruner, 1973, 1996). To illustrate this concept, one need look no further than the multitude of interpretations that exist for any piece of literature or poetry to recognize that the meanings individuals derive from the same text are wide and varied. Elmianvari and Kheirabadi (2013) draw upon Rosenblatt's Reader's Response Theory (1978) to formulate and support their assertion that reading comprehension does not come from the text itself, but it is instead dependent on the interaction between the text and the reader's background and knowledge. For this reason, it is only through discussion with each individual reader that one may discover the ways that a specific individual creates understanding of a text and the meaning that s/he derives from it.

Vygotsky's view is that learners are not simply passive receivers of knowledge but are active constructors of meaning. In his 1962 work *Thought and Language,* he describes this relationship between production and reception of speech, whether written or spoken, as a means of creating meaning through language. Assuming that the reading process involves individuals using language in order to make meaning, it is critical that teachers have students explain those meaning-making processes; without each student's insight, the teacher would have to rely on personal inferences to determine which skills and strategies students are applying during the reading process. Because constructivism is focused on questions of understanding how and why processes or behaviors occur (Hennink, Hutter, & Bailey, 2011), constructivist researchers (Bruner, 2004; Charmaz, 2006; Gee, 2011) have long used methods of interviews with participants or use of key informants to provide them with understanding of the information that the researcher cannot experience for him/herself. Beyond the simple need for understanding others' perspectives, in order to teach well, one must know the strategies and models a student is using in order to provide appropriate support.

Having students explain their cognitive reading strategies during the data collection process of Retrospective Miscue Analysis (RMA) allows students the space to bring in their own individually and socially constructed meanings and understandings of the reading process and the content of the text (Goodman & Marek, 1996). For the EL students, it also shows respect for their existing language and linguistic skills by providing them with the opportunity to bring in the reading strengths and knowledge they have already developed in their native languages and to make inter-language

connections. Seeing the types of miscues and cues students make also provides the administrator with insight into each student's approach to comprehending the text. Furthermore, through this process, students may become more aware of their individual reading process which moves control of the reading process from the teacher and empowers the students as learners.

Methodological Approach:

In this study, data collection and analysis through non-parametric measures and discourse analysis were purposefully combined to examine different elements in the study. Quantitative data were collected in order to get a perspective on the number and types of miscues students make while reading a text and qualitative data were collected to examine their reasons for making them. Combining different methods of research allowed me to develop a clearer picture of not only what was occurring, but also examine the understandings and strategies of the readers. This allowed me to develop "a fuller picture and deeper understanding of a phenomenon" (Johnson, Onwuegbuzie, & Turner, 2007, 119). Combining qualitative and quantitative data allow the researcher to develop a unique understanding of the data and clarify the results (Hesse-Biber, 2010). Greene (2005) contends that combining research methods is not only pragmatic and allowable but desirable in social research since it allows the researcher to connect individual behaviors to wider social patterns and systems. Given the complexities of social and educational research, using both methods allows the researcher to analyze the question from different perspectives (Tashakkori & Teddlie, 2010). The social world is not singularly qualitative or quantitative, and limiting oneself to either/ or will provide only partial answers to questions, whereas using different approaches to the process

makes one able to provide a multifaceted answer to research questions. In this study, that means examining not only the measurable outcomes, but investigating the reasons behind them.

While combining methods can produce more in-depth and reliable results than either quantitative or qualitative research alone (Denzin, 2010; Green, 2007), it presents its own set of challenges. One of the challenges associated with combining methods is the amount of time needed to collect both types of data. As with any qualitative study involving interview methods, it takes a significant amount of time to conduct interviews with each participant and analyze the data. In addition, researchers using both quantitative and qualitative methods must have facility with both methods of research in order to design and conduct a thorough study in each area and analyze both types of data (Johnson & Onwuegbuzie, 2004).

Quantitative data were gained through the use of a frequency table which identified the number and type of miscues made by students from each group.

Qualitative data were provided through the use of thematic analysis of the responses students gave during the retrospective miscue analysis. Thematic analysis is a method used to analyze, identify and report patterns or themes within data. From a constructivist perspective, thematic analysis asserts that meaning is “socially produced and reproduced” (Braun & Clark, 2006) and thus reflects more than just an individual perspective, but comes from a socio-cultural perspective; in this case, that perspective is influenced by the variety of language spoken in the home. Thus, rather than looking at the results of one individual RMA interview, I looked across interviews to identify any patterns of responses among and between groups. In this process, I analyzed patterns

of semantic responses, summarized those patterns, and interpreted the results in order to determine if broader implications and significance can be inferred (Braun & Davis, 2006; Patton, 1990)

Participants

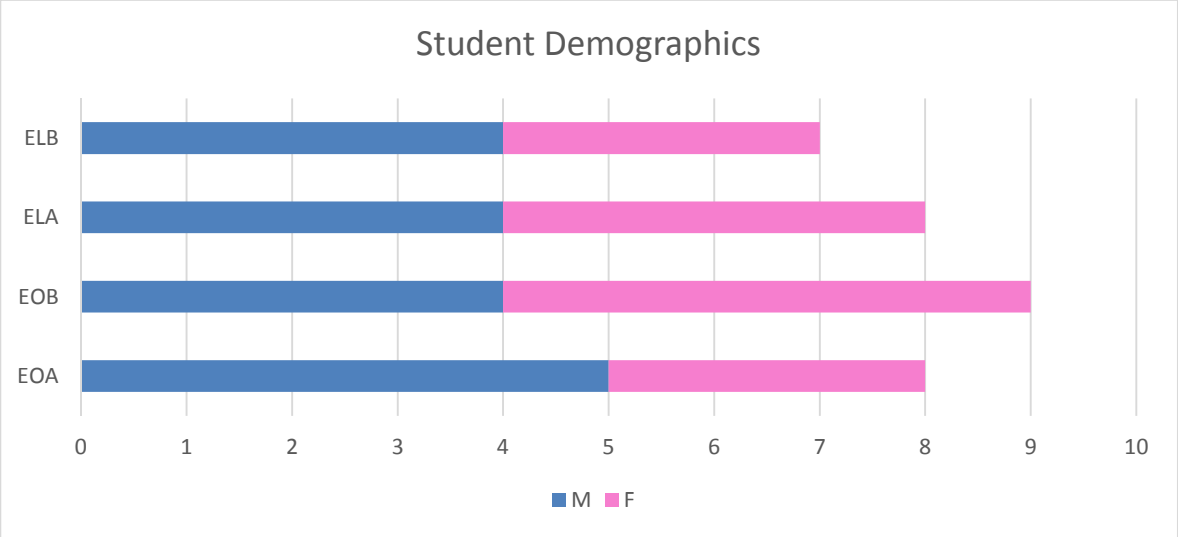
The participants for this study were fourth grade students from a large suburban school in Oklahoma. The school serves two-thousand students from prekindergarten to grade four and has both a dual language program in English and Spanish as well as English Language Development support programs. The participants were selected based on the economic and language criteria from each of the four demographic groups: English only students from low middle/high and SES homes and English learners from low and middle/high income homes. Fourth graders were selected for this study because it is in fourth grade that there is a shift from “learning to read” to” reading to learn.” Before fourth grade, the instructional focus is on the development of reading skills like decoding and fluency in order to develop automaticity of written word identification and reading comprehension skills. When students reach fourth grade, they should have developed the necessary reading skills and strategies to translate text to words and have begun a greater focus on using the text to acquire and apply new academic information. In addition, students in fourth grade begin reading a wider variety of texts and increase use of academic texts greatly (Duke, 2000; Jeong, Caffrey & Choi, 2010). Students are also expected to apply their reading skills to the textbooks they encounter in science, social studies and other content areas. At this point in school, comprehension of text becomes increasingly important to learning, and text complexity increases (Chall & Jacobs, 2003). Students also begin to analyze new

information and increase their vocabularies through reading (O'Brien, 2008). They begin in earnest working with academic texts in all content areas to learn about previously unknown concepts, to identify key ideas, draw conclusions, and create academic reports about information presented. Since the focus of this research is academic language in the context of reading, students should be in a grade where they are being immersed in academic language tasks.

The school is located in an area with higher median incomes and home prices than the surrounding school districts (US Census, 2013). However, the school boundaries also include several apartment complexes which house recent refugees from Myanmar and several smaller rental houses. The district also has ELs from other countries including Mexico, China, and Korea. For these reasons, a significant portion (32%) of their student body is composed of EL students at various income levels.
In order to capture a wide diversity of students in terms of income and English ability, all students in the four focal fourth-grade classrooms out of the eight fourth-grade classes were invited to participate in this assessment. The sample consists of English Only (EO) and English Learners (EL). All students, both EO and EL students, were drawn from both low income and middle/upper income and included in the data analysis. This allowed for a closer comparison of distinctions between income levels and across language groups. Students were selected according to the target demographics from each of the participating student groups: English only from low and upper income homes based on the family's annual income level as above or below $45,000 were included as participants, and the English learners included students who speak both European and non-European languages. The EL students selected to participate in the

study were intermediate to advance language learners according to their performance on the state language proficiency assessment, ACCESS for ELL's. At least an intermediate level of English proficiency is necessary for them to successfully read the text and think back aloud in order to respond to the RMA interview questions. Because of the intensive nature of the data collection methods, seven to nine students from each subgroup were selected from the pool of students based on inclusion in one of the two demographic and language categories. They consisted of eight English Learner male and seven English learner female students for a total of fifteen English learners and nine English Only male and eight English Only female students for a total of seventeen English Only students for a total of thirty-two participants.

Figure 1



In order to identify the income and home language of the participants, the parent permission form was translated into the home languages of the families and handed out to each student through either an email from the principal or a hard copy given to the home room teacher. The initial form includes only the request for permission. Once permission had been obtained, a follow-up questionnaire was sent to parents. The

questionnaire attempts to obtain more specific demographic information including the following: 1) educational level, 2) income level, and 3) language used at home. For the information about income level, parents are not asked about specific income levels, rather they are asked to select an income level wither above or below 45,000; this income level was chosen because it represents both the median income in Oklahoma and the annual income ceiling for a family of four to receive reduced school lunches according to federal guidelines (USDA, 2015).

The Data Collection Instruments

Given my earlier description of reading as a cognitive and constructive process, it is important that the data collection instruments help to identify the different cognitive processes the students use when reading. Two separate but related instruments were used in order to determine each participant's approach to unfamiliar academic vocabulary and the cueing systems they used when reading an academic passage and encountering unfamiliar vocabulary in context.

The Qualitative Reading Inventory.

The primary instrument is a fourth grade reading passage from the *Qualitative Reading Inventory-5*, (QRI,) (Leslie & Caldwell, 2010; see Appendix E). *The Qualitative Reading Inventory-5* (QRI) (Leslie & Caldwell, 2011) is an informal reading inventory which identifies the miscues students produce while reading a passage. It is designed to determine the conditions under which students are able to identify words and comprehend texts. It is also used to determine the instructional, independent, and frustration reading levels of students. The QRI has been shown to have high reliability. Research by Nilsson (2013) has shown the QRI-5 to be the most reliable published

informal reading inventory in the market with alternate forms, internal consistency, and inter-rater reliability. Research by Caldwell and Leslie (2011) shows that inter-rater reliability on miscues is .99. Passages at each grade level reflect academic topics and fiction pieces in a range of Lexile levels. The QRI at the fourth-grade level includes topics in science and social studies that are representative of materials used in a traditional classroom at the specific grade level. The specific passage used in this study, “The Busy Beaver” is an actual excerpt from a fourth-grade science textbook produced by Scott-Foresman and has a Lexile level of 670. The Lexile score places the text level near the end of third grade or the beginning of fourth grade. This text was selected because it includes sufficient academic vocabulary to meet the needs of this study and because it is likely to be at instructional-level text for most participants since, according to the QRI, it has a beginning fourth grade text and data was collected in the middle to the end of the fourth-grade year; an ending third grade text should be appropriate for students who might have a lower-than-average academic reading proficiency. Of course, the reading ability of each student varies, but I chose to have all students read the same passage in order to keep the text consistent so as to remove the variability that could be caused by multiple texts with different structures, vocabulary, and readability.

The vocabulary pretest.

In addition to the leveled reading passage, QRI provides an additional vocabulary pretest with every passage (see Appendix B). The words in the vocabulary assessment for the fourth grade QRI list are academic words on grade level that are used frequently in the text. While most of the academic terms were from the QRI vocabulary list, I

added other academic terms from the reading passage that were also contained on the Oklahoma State Department of Education (OSDE) academic vocabulary list (Building Academic Vocabulary, 2012). The OSDE word list is based on the work of Marzano and Pickering (2005) and contains academic terms that students are expected to know based on grade level and content area. This allowed me to ensure that the selected words were primarily used in academic texts. The fifteen items consisted of the eleven words included in Qualitative Reading Inventory 5 (QRI) assessment authored by Leslie and Caldwell (2011) while four other words were from the Academic Word List on the Oklahoma State Department of Education. Three of the added words were below grade level and placed at the beginning of the word list to instill confidence in the students by providing more familiar terms for them to define at the onset of the assessment. The other word added to the list was one at grade level to round out the number of words. This presents students with both more and less familiar terms and provides a wider range of vocabulary terms than the QRI grade level list alone, allowing me to better gauge students' current level of vocabulary knowledge.

The pre-vocabulary test was given to fifty-nine students: thirty English learners and twenty-nine English only students. Given the critical importance of vocabulary knowledge to the understanding of the passage (Mancilla-Martinez & Lesaux, 2010; Townsend, Filippini, Collins & Biancarosa, 2012), each student had to score a minimum of 70% correct on the vocabulary terms to be included in the study. If the student did not score 70% on the vocabulary assessment, s/he was given the alternative vocabulary test of words that have similar academic sources, but came from lower grade level vocabulary lists (see Appendix C). This provided students with the

opportunity to define a list of words and have a successful assessment experience before being returned to the classroom.

The retrospective miscue analysis.

The retrospective miscue analysis is a tool based on the work of Kenneth Goodman (1969) and Yetta Goodman (1996, 2008). It is designed to help readers develop consciousness and the ability to analyze the reading strategies they use especially as concerned with meaning making (Goodman, 1996). Students listen to themselves reading and discuss the degree to which miscues are semantically or syntactically similar to the original text, and then to discuss to what factors in the text or word may have contributed to the creation of the miscue. The questions developed by Goodman (2008) include questions about semantic acceptability, visual similarity and possible reasons for the creation of the miscue. Retrospective miscue analysis has been seen as a valuable tool in measuring students awareness of their reading strategies in addition to helping them learn to monitor their reading strategies and improve their perceptions of themselves as readers (Almazroui, 2007; Bradley &.Vaughn, 2016; Rasinski & Hoffman, 2003).

Data Collection Procedures

Each assessment was done individually and consisted of three parts: vocabulary pre-test, QRI passage read-aloud and corresponding miscue analysis, and retrospective miscue analysis. I began by having students read a list of fifteen academic terms that occurred within the text. The fifteen terms selected were drawn from the vocabulary list designated by the QRI and from Marzano and Pickering's (2010) academic word lists that include terms from kindergarten to fifth grade. This list is written in order by grade

level of the vocabulary with the three beginning terms below grade level and moving to words from the text that are at the fourth-grade level. Moving from less to more challenging vocabulary allowed students to begin reading the vocabulary list with more common terms and permitted me to determine the student's familiarity with the academic vocabulary in isolation before they read the passage. I was able to see the accuracy and automaticity of the word identification which allowed me to gauge the level of familiarity each student has with the terms as they encountered them within the text. Familiarity of academic vocabulary can also provide an indication of the student's overall reading level.

If a student struggled to accurately read the words (for example, if s/he sounds out letter by letter, makes miscues that go unnoticed or uncorrected, repeats word parts over and over before successfully completing the word) an alternate reading list of words from kindergarten and first grade word lists was given. The reading and defining of this lower grade level word list was designed to provide the student with an opportunity to have a successful assessment experience before returning to class even though the student would not be included in the study.

The assessments were administered individually and given in a separate room in order to avoid classroom distractions and to provide each student with a degree of privacy to reduce self-consciousness. I retrieved and returned each student to the classroom which allowed me a few moments to engage the students in conversation and set the students at ease before beginning the assessment. The assessment of each student took approximately twenty minutes.

Vocabulary pretest.

Because there is such a strong correlation between vocabulary knowledge and reading comprehension, it is important to evaluate the students' current level of vocabulary knowledge. A fifteen-item vocabulary test was administered prior to the administration of the reading passage.

In order to determine the depth of familiarity with each of the words on the list, each child was asked to define the vocabulary terms. I began the list with kindergarten level vocabulary in order to put students at ease and allow them to have some successful responses. Each response was assessed on a three-point scale designed as part of the QRI to measure familiarity with the term. The three-point scale measures the reader's understanding of the words based on how well s/he is able to explain or define the words. Three points are given if the student states a definition or synonym for the word, two points for a characteristic or example, one point for a general association, and zero points for a non-response or "I don't know (see appendix C). This allowed me to evaluate the student's level of familiarity with the academic words on the given list and prepare students to encounter what may be challenging terms before they began the reading. Once the student had successfully defined the words on the list, the reading passage was administered.

QRI passage read aloud.

The Qualitative Reading Inventory by Leslie and Caldwell (2011) was the source of the reading. After the vocabulary pretest, the students read aloud the selected passage from the QRI. As the student read, s/he was audio recorded and I used my copy of the text to take running records. (The script providing directions to the student for this task can be found in appendix E.) A copy of the text was in front of the

researcher who noted all substitutions, omissions, insertions, and self-corrections that the student made as they read aloud. In order to assure the reliability of my miscue analysis, a classroom teacher with substantial experience using miscue analysis also listened to the students' recordings and identified the miscues independently. Her miscue analysis confirmed my analysis of the number and types of miscues produced by each student. We had 100% agreement on the number and types of miscues produced by the students while reading.

Retrospective miscue analysis.

Understanding how students approach unfamiliar vocabulary is an important piece of the comprehension process. Students must understand between 95% and 98% of the words on the page in order to understand the text (Hu & Nation, 2000; Schmitt, Jiang & Grabe, 2011). Thus examining the strategies that students use to decode and comprehend vocabulary in context is an important piece in understanding the comprehension process. After the completion of the read-aloud, the reader and researcher sat down and listened to the recording together. While listening, the student followed along in the text. The researcher stopped the text when one of the key miscues of substitution, omission, or repetition took place and using the protocol established by Goodman, Goodman, Marten & Flurkey (2008) discussed the miscues that the student made (see appendix F). While the retrospective miscue analysis is going on, it is important for the researcher to highlight for the reader when the student created miscues that maintain meaning and note the self-corrections the student made in order to provide the student with positive feedback on the reading strategies used.

During the retrospective miscue analysis, a second audio recorder was be used to capture the discussion about the miscues. Both recordings served as data.

Data Analysis

I obtained quantitative data by identifying the number and types of miscues students made when reading the passage from the QRI. Miscues included omissions, substitutions, and insertions. Self-corrections were also noted. In addition, I analyzed each type of miscue to determine if it had visual similarity to the text or if it was semantically or syntactically acceptable in the context. These data enabled me to compare the number and types of miscues made between students who are low SES and high SES and those who spoke English only (EO) and those who were learning English (EL) (see table 3.1)

Table 3.1
Comparison of miscues.

Group	Omissions range	Median	Insertions range	Median	subs	Median	Seman accept	Syntac accept	Self-correct
EOA									
EOB									
EO total									
ELA									
ELB									
EL total									

EOA – English only above median income; EOB – English only below median income
ELA – English Learner above median income; ELB – English Learner below median income

Whether students rely on visual similarity or substitutions which retain meaning can be an indicator of the cueing systems that each student is relying on to decipher text. This will also help me to guide instructors in helping students strengthen the use of less commonly used cueing systems, decoding and meaning-making strategies while

reading. In addition, if teachers are able to predict the types of miscues students are likely to make, they may be able to provide instruction to counter the problem.

In order to determine if there are differences between the groups, In order to determine if there were differences between the groups, a two-independent variable test was used to determine the statistical significance of each area of comparison. Specifically, a Mann-Whitney-Wilcoxon non-parametric test for non-normal distributed data was used to compare the differences between the groups. The Mann-Whitney–Wilcoxon does not assume anything about the distribution of the dependent variable. Thus it does not compare median scores, but mean scores.

In this study, the expected outcome would be the null hypothesis stating that there is no difference between groups. The second hypothesis states that there is a difference between groups in the types of miscues made.

H_e = There is no difference between groups on the types of miscues made.

H_1 – There is some difference between the different groups of students.

A qualitative approach was used in retrospective miscue analysis in order to identify the cueing systems students are using. I collected qualitative data in the form of interviews conducted with students during the retrospective miscue analysis. The quantitative data in terms of ratio of miscues and accuracy rate allowed me to determine the frequency of miscues made, but the narrative data from the students provided me with data about *why* the students made the miscues. Without their explanation, there is no way for an outside observer to understand each student's thinking process and how or why the students selected the strategies they used when making the miscue. From

an outsider's perspective, I might make incorrect assumptions about why students made the miscues they did, but interviewing them allows me to confirm or disconfirm the hypothesis I formed based on the miscues alone.

To analyze the miscue analysis, miscues were coded using the procedure established by Goodman, et al (1987). (See miscue analysis sheet, appendix D.) Miscues are analyzed based on five criteria:

1. Does the miscue share visual similarity with the text? Does it begin or end in the same letters? Does it share a spelling pattern?
2. Are the miscues semantically acceptable? Does the miscue make sense in the context?
3. Are the miscues syntactically acceptable? Are they the same part of speech?
4. Do the miscues change the meaning of the text?
5. Does the reader self-correct?

Each response was coded yes or no on the miscue analysis worksheet. In addition the error ratio, the accuracy rate and self-correction ratio was calculated for each student and used for points of comparison within and across groups.

The RMA interviews with the students were transcribed and each was labeled to reflect the native language and income level of the speaker. The interview included the topics identified by Goodman and Marek (1996) including having students provide reasons why the miscues might have been made, describing whether the miscues affected their understanding of the text, and discussing whether the miscues should be corrected. Transcripts with then be reread and themes and categories of comments

were identified. For example, students might identify strategies that allow them to keep reading or identifying clues that required them to go back and self-correct.

I transcribed each discussion with the students and label the transcription with native language designations. During the discussion, the students and I talked about why the student thinks s/he made the miscue- was it a new word, a word similar to another word, or a careless error? In addition we talked about whether the mistake affected their understanding of the reading or if the chosen fit and made sense in the passage (Goodman & Marek, 1996). Upon completion of the discussions, I read and reread all of the transcripts and identify themes and categories of student comments.

The RMA interview data was analyzed using the thematic analysis method as described by Braun and Clarke (2006). To do this, I listened to and transcribed all of the student comments verbatim. The data was then be reviewed in its entirety to gain a sense of the patterns of response. I developed initial codes to describe the significant repeated patterns of student comments. After the initial coding process, the codes with accompanying data extracts were sorted into potential categories, and I created categorical statement to describe connections among students' reading processes across categories. At this point, I reviewed categories of response in order to determine which categories had sufficient data support, which categories needed to be condensed together, and which may need to be broken down into separate categories. This process ensures that the data within each category is meaningfully unified and that there are clear distinctions between categories (Braun & Clarke, 2006). Using these patterns, I present a synthesis of the findings that responds to the research question of what types of cueing systems and cognitive processes students used.

Limitations of the Study

There are several limitations in this study. The first limitation is the demographics and size of the student population involved in the study. Selection of the individual students was dependent on voluntary participation and the study was conducted at only one school site and on one grade level, so results could be affected by regional, school-wide, or grade-level teaching practices. In addition, with a sample size of thirty-two students, each quadrant within the study had fewer than ten participants, so while patterns might have emerged, very few reached the level of statistical significance. This greatly limits the generalizability of the results. In addition, results could also differ with students who are more or less proficient at reading academic texts. However, this research can serve as a starting point for furthermore focused or broadened research into strategy use.

Another area of concern is the selected methodology. The use of retrospective participant accounts has drawn some criticism (Nisbett & Wilson, 1977; Perry & Winne 2006; Veenman, 2005). The major arguments against the use of retrospective accounts as data are that some cognitive processes are so automatic that readers have no idea what strategies they have used. Another concern is the delay between the use of strategy and questions about strategy use could cause readers to reconstruct what they believe they did rather that what they actually did. However, Ericsson and Simon (1993) and Garner (1987) established methodological protocols in order to get the most accurate reports. This study follows those guidelines by reducing automaticity by use of a complex reading task and by reducing the amount of time between strategy use and reporting thus reducing the chance of memory loss.

I also recognize that there are many more processes and sub-processes involved in reading comprehension including background knowledge and understand of genre and rhetorical style. This study examines only one of the many processes involved in reading comprehension, but it is a foundational one. . A student's use of the cueing system provides insight into the strategies the student is using in order to create meaning from the text. This knowledge can provide teachers with knowledge about the students reading strengths and provide them with areas that need further reinforcement

Last, having all students read the same passage even though at grade level could have resulted in some reading a text at their frustration level while others read at their independent reading level. This could have impacted the number of miscues available from all participants for analysis. When tasks become simple and familiar, students are more likely to rely on automated processes, which are also unconscious processes, making it impossible for them to report on the processes they used. However, the use of complex or novel tasks increases the likelihood that the reader will consciously focus on strategy use (Ericsson & Simon, 1993; Geisler, 2013; Singhal, 2001). Thus, even though this text was a grade-level passage, some students may have consciously focused on the task, but some were reading with automaticity that may have limited the attention they paid to strategy use.

To address these limitations, researchers could extend the amount of time and number of sites involved in the research. This could potentially address the limitations of sample size and variety of participants. Second, students could participate in miscue analysis with reading passages at different levels in order to determine if the miscue patterns remain the same regardless of text difficulty. Further research could also be

done to determine if knowledge of miscues impacts teaching. Third, sample size could have been expanded had the study been conducted over the course of a school year. Furthermore, future research could be extended throughout the year to examine whether teachers' awareness of students' use of the various cueing systems translates into more targeted classroom practice and how students' own awareness of the reading process impacts their overall reading development.

Conclusion

Although the use of mixed methods of research present some challenges in administration and analysis, I believe the strengths of the method outweigh them. Using this method not only allows me to see what is happening when students from different language groups read, but also to gain understanding of why miscues are happening and provide insight into the "black box" of reading. This study may provide insight for researchers into the impact of language and SES on the development into reading skills. More importantly, it may provide teachers with more tools to create instruction best suited to different students' needs.

CHAPTER FOUR

RESULTS

This chapter examines the results of the primary questions related to the use of cueing systems by English Learners and English Only students:

1. How do the number of miscues vary based on socio-economic and language status?
2. How do the types of miscues vary based on socio-economic and language status?
3. What variations exist in the explanations students provide for miscues based on language status?
4. How do the explanations students provide for miscues vary based on SES?

These questions were addressed in the quantitative section using the Mann-Whitney U non-parametric test to examine whether the results reach the level of significance ($p \leq .05$).

This chapter will first examine the variation in the number of miscues based on language status. In this section I examine the number of all miscues based first on language status and then by socio-economic status in order to determine what

variations, if any exist between English-only students and English learner students in the number of miscues produced.

Next, I examined the types of miscues made by each group to determine if there is variation in miscue type based on language or socio-economic status. In this section, I will also address not only the types of miscues, but also examine visual similarity, semantic acceptability, and syntactic acceptability in order to determine whether there is variation in the cueing systems being used based on language or socio-economic status.

In section two, the qualitative data was collect to examine the language systems that the readers used when creating the miscue through the process of retrospective miscue analysis (RMA). I will explain the results of a retrospective miscue analysis (RMA) and describe the responses given by the students based on SES and language status. A comparison of their responses will then be conducted.

The participants in this study consisted of thirty-two fourth graders from a suburban Oklahoma district. Students were divided into SES groups that were above or below a household income of $45,000. This income level was selected for two reasons: it is the median income in the state of Oklahoma where the study was conducted, and it is also the amount used by the federal government to determine free and reduced lunch.

In referring to the comments, students' words are written in quotations, the excerpts from the text are underlined, and specialized terminology is italicized. For example, if the text contained the phrase around the pond, and the student said, "around the pound."

Number of Miscues

The first questions addressed were the number of miscues produced based on socio-economic status and language. English 0nly students and English learners were compared; then high and low SES students and finally, within language group comparisons were made based on SES in order to control for the additional influence of language when examining SES as a factor.

Number of miscues by SES.

The first analysis that I conducted on each students' reading of an informational, grade level passage from the Qualitative Reading Inventory-5 (QRI-5) uncovered the variation in the number of miscues produced by students based on SES in the reading of a the same grade level passage. The three major categories of miscues that I tallied were omissions, insertions, and substitutions, based on Goodman's work (1967, 1995). Did SES status impact the overall number of miscues a reader made while reading informational/academic text? The results for the raw data are found in Table 1 below.

Table 4.1
Number of Miscues by SES

	n	Total # Miscues (Mis)	Median	Range	Mis corrected	% Mis Corrected
High SES	16	140	7	2 - 20	23	16%
Low SES	16	198	10.5	4 - 35	41	20%

The overall numbers suggest that there may be a difference in the number of miscues based on the differences in the number, median and range of miscues for the high SES students and the low SES students However, after examining the raw data, I ran a comparison of the number of miscues through SPSS analysis software using a two-independent variable test to compare the number of miscues that occurred between

the high and low SES students. These results shown in table 4.2 show there is no significant difference in the number of miscues based on SES (p=.160) .

Table 4.2
Statistical Comparison of Miscues by SES

Test Statistics[a]		
Mann-Whitney U	90.500	
Wilcoxon W	226.500	
Z	-1.419	a. Grouping Variable: income
Asymp. Sig. (2-tailed)	.156	b. Not corrected for ties.
Exact Sig. [2*(1-tailed Sig.)]	.160[b]	

Number of miscues based on language.

The second research question was whether there was a significant difference in the overall number of miscues based on language status as an EO speaker or an EL.

Table 4.3
Total miscues by language

	N	Median	Range
EO	17	8	2 - 35
EL	15	10	3 - 19

N= number, M = average

Even though the English only students had a wider range in the number of miscues (2-35 vs 3-19), the median number of miscues produced by English only students was still lower than that of the English learners (8 vs 10) . This difference was not statistically significant at .502

Table 4.4
Statistical Comparison of Number of Miscues by Language

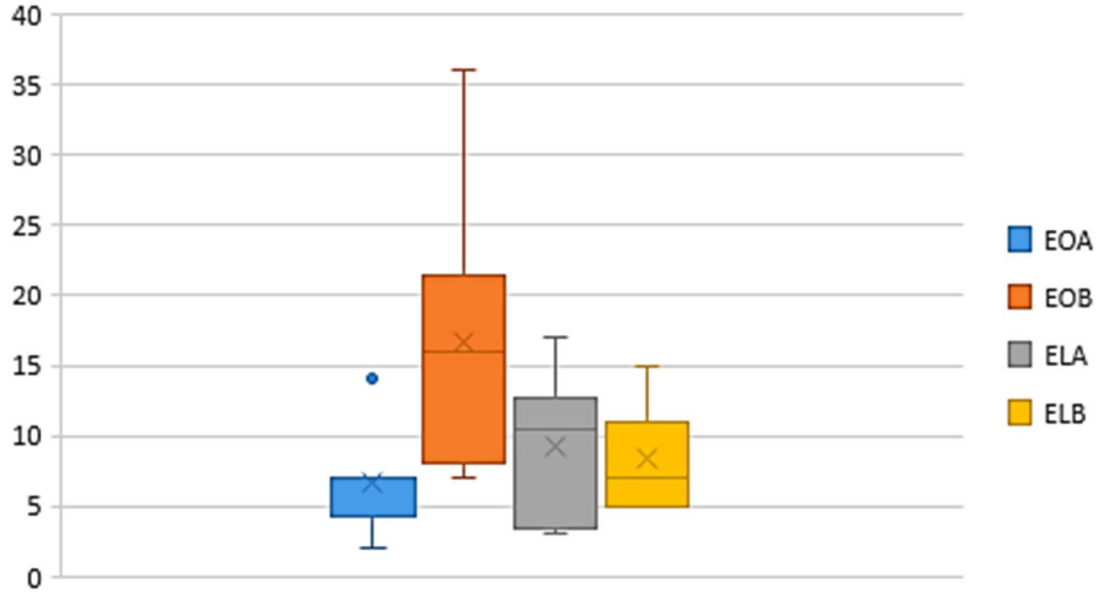
Test Statistics[a]	
	Total miscues
Mann-Whitney U	109.000
Wilcoxon W	229.000
Z	-.702
Asymp. Sig. (2-tailed)	.483
Exact Sig. [2*(1-tailed Sig.)]	.502[b]

a. Grouping Variable: eoel b. Not corrected for ties.

Number of miscues within language groups based on SES.

After examining the number of miscues produced by each group, the raw data indicates that the EO students below the median income (EOB) made the largest number of miscues compared to all of the other groups.

Figure 1
Number of miscues within language groups



The English only students above median income (EOA) produced from 2 to 20 miscues with an average of 7.38 in the reading passage. The majority of the students in the group had seven or fewer miscues. The English only below median income (EOB) students had a range of miscues from 7 to 35 with a median of 15.56. Two-thirds of the students in this group produced eleven or more errors.

A Mann-Whitney test indicates that the number of errors was greater for low-income EO students (M =15.56) than for high income English students (M= 7.38). This difference was significant at p = .0124 as shown in Table 4.5

Table 4.5
Number of miscues by language and SES

Sum of ranks	Mean of ranks	U	SD	Z	p	
EOA	45.5	5.69	62.5			
EOB	107.5	11.94	9.5			
EOA & EOB	153	9	9.5	10.3923	2.501	.0124*
ELA	67.5	8.44	24.5			
ELB	52.5	7.5	31.5			
ELA & ELB	120	8	24.5	8.641	.347	.726

*p is significant at ›.05

In order to examine the distinction that language plays in the number of miscues, a Mann Whitney was run within socio-economic groups. For the low income students there was a significant distinction (p = .042) in the number of miscues with the low-income students who were English-only speakers making more miscues than the English learners from low income homes. See Table 4.6

Table 4.6
Number of miscues low SES

	N	Sum of ranks	Mean of ranks	U	SD	Z	p
EOB	7	82	10.25	10			
ELB	8	38	5.43	46			
EOB and ELB	15	120	8	10	8.64	2.03	.042

A Mann Whitney was also conducted on the high income students to see if the language alone made a similar distinction. The results show that within the high income group, the difference in the number of miscues was not significant at p=.646.

Table 4.7
Number of miscues in the high SES group

	N	Sum of ranks	Mean of ranks	U	SD	Z	p
EOA	9	59.5	7.44	32.5			
ELA	8	60.5	8,64	23.5			
EOA and ELA	17	120	8	23.5	8.64	.463	.646

Types of Miscues

I divided the students into four subsets for evaluation based on language and SES in order to compare the types of miscues each group of students produced. Thus, I divided the EO students into those whose income was above the median income in Oklahoma (EOA) or below the median income in Oklahoma (EOB). I did the same with the group of English Learners labeling them English learners with income above the median (ELA) and English learners with income below the median (ELB). Each subset was evaluated separately with divisions based on language and on SES status. Thus, the four groups I compared were EO with high SES (EOA), EO with low SES (EOB), EL with high SES (ELA), and EL with low SES (ELB). The miscue types that I looked for were those used by Goodman (1967, 1995): omissions, insertions and substitutions. In addition, I evaluated substitutions based on the visual similarity of the text word and the oral miscue produced by the student. Each substitution was rated as having *high*, *partial* or *no* graphic similarity. This rating was based on dividing the words into three parts: beginning, middle, and end. The number of word parts that were the same determined the classification in visual similarity. I then compared miscue types between each subset and between the major categories of SES and Language.

Types of miscues within language groups.

Groups 1 and 2, English only speakers from middle/high and low incomes.

The first comparison of miscue types I performed was within the English Only (EO) group. This group was divided by SES to determine if there was a difference based on income background within the English only group for the types of miscues. These groups were labeled English Only Above median income (EOA) and English Only Below median

income (EOB). The miscues were conducted on the same fourth-grade reading passage taken from the QRI.

Table 4.8
English Only by SES

	N	Omissions range	Median	Insertions range	Median	Substitutions range	Median
EOA	8	0 - 3	1	0-4	.5	2-11	3
EOB	9	0 - 8	3	0-7	3.5	4-22	8

Using a nonparametric test of two independent variables I examined the types of miscues produced by the high SES and low SES English Only students. With a significance level of $p \leq .05$, three results reached the level of significance. . The significant findings were in the number of insertions, substitutions, and self-corrections, as indicated in Table 4.9 below. No significance was found in the number of omissions.

In addition to calculating the number for each type of miscue, each miscue was rated as to whether or not they were semantically acceptable, meaning that the miscue makes sense in the specific situation, and syntactically acceptable, meaning that it is grammatically acceptable in the situation. For example, the substitution of “lifetime” for the text word life does not change the meaning of the sentence the beaver spends most of its life near this pond, and the revised sentence produced by the student is still grammatically correct. On the other hand, the substitution of “down” for the word door in doorway changes the grammatical function from a compound noun to an adjective and creates a phrase that does not make sense in the context, making it syntactically and semantically unacceptable.

Table 4.9 shows the statistical significance of the types of miscues produced by the students in each of the English only groups as well as the statistical significance in the differences in the semantic and syntactic acceptability of the miscues produced. It

also show the statistical significance of the number of self-corrections made by the students in each group.

Table 4.9

Statistical significance in error types EOA and EOB

	Omissions	Insertions	Substitutions	semacc	syntacc	Self-corrected
Mann-Whitney U	21.000	15.000	16.000	17.500	11.500	15.500
Wilcoxon W	57.000	51.000	52.000	53.500	47.500	51.500
Z	-1.475	-2.052	-1.938	-1.798	-2.369	-2.032
Asymp. Sig. (2-tailed)	.140	.040	.053	.072	.018	.042
Exact Sig. [2*(1-tailed Sig.)]	.167[b]	.046[b]	.059[b]	.074[b]	.015[b]	.046[b]

Semacc – semantically acceptable synacc – syntactically acceptable

.

Based on the results, monolingual English students from low-income homes were much more likely to add words in the text and to have changes that were not syntactically acceptable. The insertion of words by EOB students was significant at p = .046. The use of substitutions approached by did not attain statistical significance at p = .059. The distinction in the syntactic acceptability of the miscues produced by the English Only students from above median income homes (EOA) and the English Only students from homes with incomes below the median (EOB) reached the level of significance at p =.015. EOB students made a significantly larger number of syntactically unacceptable miscues than the EOA students.

Miscues with visual similarity.

While the retrospective miscue analysis allows students to explain the reasons they believe that a miscue was made, examining the types of miscues indicated a difference in the use of the visual cueing system between the high income and low-income English only groups. Substitutions based on visual similarity were classified as *highly similar, partially similar,* and *not similar* in terms of graphophonic or visual

similarity. This classification is based on the number of word parts (beginning, middle, and end) that were the same in the original text and in the substitution. For example, the words busy and "buzzy" would be considered highly visually similar because the beginning and the end of the word are identical, whereas live and "have" share only an ending and would be considered partially similar.

Table 4.10 provides the data indicating the percentage of miscues based on visual similarity.

Table 4.10
Visual similarity of English Only students'' miscues

Visual Similarity	**high**	**partial**	**none**
EOA	57%	11%	32%
EOB	26%	41%	33%

I found that the EOB group made many more substitutions that were only partially visually similar (41%) than did the EOA group (11%). The majority of their miscues were only partially visually similar with only one word part the same. This distinction in the production of partially similar miscues is statistically significant (p=.002).

Table 4.11
EO Miscue Types by SES

	Types of Miscues			Visual Similarity		
	omissions	insertions	substitutions	high	partial	none
EOA	19%	17%	64%	57%	11%	32%
EOB	19%	23%	58%	26%	41%	33%
Asymp. Sig. (2-tailed)	.140	.040	.053	.694	.002	.202
Exact Sig. [2*(1-tailed Sig.)]	.167[b]	.046[b]	.059[b]	.743[b]	002[b]	.236[b]

Another significant result between the high and low-income English only groups was the finding of a greater number of self-corrections by the low SES group. Low SES

EO students produced a significantly higher number of self-corrections than did the High SES EO students (p =.046). This result seemed surprising, so I ran an additional analysis to examine the syntactic (relating to grammar) and semantic (relating to meaning) acceptability of the miscues.

Table 4.12
EO Semantic Acceptability by SES

	Semantic accept	No change	Part change	Major change	Syntactic accept	Self correct
Mann-Whitney U	17.500	25.500	21.000	9.000	11.500	15.500
Wilcoxon W	53.500	61.500	57.000	45.000	47.500	51.500
Z	-1.798	-1.025	-1.457	-2.639	-2.369	-2.032
Asymp. Sig. (2-tailed)	.072	.305	.145	.008	.018	.042
Exact Sig. [2*(1-tailed Sig.)	.074[b]	.321[b]	.167[b]	.008[b]	.015[b]	.046[b]

The results determined that the low SES group had a significantly larger number of miscues that created major changes in meaning (p = .008_and were syntactically unacceptable (p = .015). This suggests the possibility that the high SES students created more miscues that were semantically and syntactically acceptable in the context and did not require self-correction in order to maintain the meaningfulness of the text.

Groups 3 and 4 high and low EL. The EL group was also divided into two groups based on SES. The English Learners with families having above the 45,000-income level (ELA) and learners whose family incomes were below the set income level (ELB).

Table 4.13:
EL Miscue Types by SES

	N	# Miscues	Omissions	Median	Insertions	Median	Substitutions	Median
ELA	8	85	1 - 3	1,5	0 - 7	1	0 - 13	4.5
ELB	7	58	0 -2	1	0 - 2	2	3 - 13	5

Although the data suggests that there might be a distinction in the types of miscues, unlike the English Only students, the results for all categories of miscue types failed to reach the level of statistical significance

Table 4.14:
Statistical Significance of EL Miscue Types

	Omissions	Insertions	Substitutions	Seman acc	Syntact acc	Self correct
Mann-Whitney U	12.000	28.000	25.500	26.500	27.000	21.500
Wilcoxon W	40.000	56.000	61.500	54.500	63.000	49.500
Z	-1.982	.000	-.291	-.179	-.117	-.825
Asymp. Sig. (2-tailed)	.048	1.000	.771	.858	.907	.410
Exact Sig. [2*(1-tailed Sig.)]	.072[b]	1.000[b]	.779[b]	.867[b]	.955[b]	.463[b]

Overall SES data.

The final comparisons were based on the socio-economic status of the students. Several comparisons were made. First, all students were compared based on SES status regardless of language. In other words, all students, both EO and EL, were grouped based on income status. Secondly, comparisons were made based on within language group based on SES.

Table 4.15

Statistical Significance by Miscue Type

	Omissions	Insertions	Substitutions	semacc	syntacc	selfcorrect
Mann-Whitney U	114.500	91.500	87.000	93.000	78.500	88.000
Wilcoxon W	250.500	227.500	223.000	229.000	214.500	224.000
Z	-.522	-1.403	-1.553	-1.340	-1.877	-1.581
Asymp. Sig. (2-tailed)	.602	.161	.120	.180	.060	.114
Exact Sig. [2*(1-tailed Sig.)]	.616[b]	.171[b]	.128[b]	.196[b]	.061[b]	.138[b]

Table 4.15 shows that there is no statistical significance between the two groups of students in the production of error types:

Miscues types by language.

The next questions I examined was whether there were differences in the number and type of miscues based on whether the students were English Only or English Learners. As the data shows, the English only had a wider range in the number of miscues in omissions and substitutions, but the median numbers were remarkably the same.

Table 4.16
Miscue Types by Language

Group	Omissions	Median	insertions	Median	substitutions	Median
EO	0-8	1	0-7	2	2-22	6
EL	0-3	2	0-7	1	0-13	6

I compared EO students and EL students within income groups so that the main distinction is based on language, not economic status. Therefore, high income students who spoke only English and high-income students who were learning English were compared.

Table 4.17
High SES EO and EL Miscues

	Omissions	**Insertions**	**Substitutions**	**semacc**	**syntacc**	**corrected**
Mann-Whitney U	15.000	25.000	31.000	29.000	28.500	18.000
Wilcoxon W	51.000	61.000	67.000	65.000	64.500	54.000
Z	-1.848	-.767	-.106	-.321	-.371	-1.627
Asymp. Sig. (2-tailed)	.065	.443	.916	.748	.711	.104
Exact Sig. [2*(1-tailed Sig.)]	.083[b]	.505[b]	.959[b]	.798[b]	.721[b]	.161[b]

The EO students made fewer miscues overall (M =7) than did the EL students (M=10.5) and a greater number of the miscues made were semantically acceptable (75% vs 58%). Although when I compared the data for the high income EO and EL students none of the data reached the level of significance at p ≤ .05.

Table 4.18
Low SES EO and EL Miscues

	Omissions	Insertions	Substitutions	Semant accept	Syntact accept	Self correct
Mann-Whitney U	17.000	13.500	21.000	14.500	11.500	15.500
Wilcoxon W	45.000	41.500	49.000	42.500	39.500	43.500
Z	-1.569	-1.944	-1.118	-1.825	-2.131	-1.731
Asymp. Sig. (2-tailed)	.117	.052	.264	.068	.033	.083
Exact Sig. [2*(1-tailed Sig.)]	.142[b]	.055[b]	.299[b]	.071[b]	.031[b]	.091[b]

I also compared the English Only and the English learners from lower-income home in order to eliminate socio-economic status as a factor and focus the comparison on language. In this comparison I identified one significant result in the syntactic acceptability of the miscues (p = .031). The English Only low-income students had a greater number of miscues that were not syntactically acceptable.

Table 4.19
Overall language comparisons

	Omissions	Insertions	Substitutions	semacc	syntacc	corrected
Mann-Whitney U	12.000	28.000	25.500	26.500	27.000	21.500
Wilcoxon W	40.000	56.000	61.500	54.500	63.000	49.500
Z	-1.982	.000	-.291	-.179	-.117	-.825
Asymp. Sig. (2-tailed)	.048	1.000	.771	.858	.907	.410
Exact Sig. [2*(1-tailed Sig.)]	.072[b]	1.000[b]	.779[b]	.867[b]	.955[b]	.463[b]

When all of the EO students were compared with all of the EL students, there were very few distinctions and none of the distinctions reached the level of statistical significance at p ≤ .05.

Thus, after examination of all of the data, there were very few significant findings. However, the most significant finding was the number of miscues made by EOB students. EOB students had more miscues than did the high income EO students and both groups of EL students

Retrospective Miscue Analysis: Qualitative Data

The most striking results came from the retrospective miscue analysis (RMA). During the RMA students listened to themselves immediately after reading the text aloud and were asked to explain why they believed they made the miscue that they did. Each response was evaluated using line by line open coding to determine categories based on similar responses. Open coding is a process of text analysis. During this process, text, in this case student responses, are coded or labeled based on the type of response they give. For example, remarks like "I messed up" indicate the student's belief that s/he made an error. Thus, during open coding, remarks like the one above were labeled error. Each response given by a student was coded. After which, the open codes were analyzed for repeated types of responses or patterns.

During open coding, several patterns emerged (See Table 4.20). Some common student responses were categorized as *error* and *I don't know*. These types of responses were somewhat expected, as students frequently blame carelessness or simply have no conscious idea why they made the miscue (Flurkey, 1996; Goodman, 2008; Marek, 1996; Paulson, 2002). For example, when students were asked why they might have produced the miscue, students simply responded with "I don't know," or "I messed up."

Two other common responses students gave were that the miscues were based on visual or aural similarity. These responses were categorized as *looks like* or *sounds like*. Students gave responses indicating the miscue looked like or sounded like the original word from the text. For example, if a student pronounced the word busy as "buzzy" or furry as "funny*",* the student frequently commented that the words looked similar. Visual similarity is one of the most commonly used cueing systems for reading, in general, so this was also an expected response. In the same vein, students would comment that words like and and on or the and a sound alike. Given that as we read silently, we hear our inner voice pronouncing the words as we read them (Clifton, 2015. Perrone-Bertolotti et al, 2012), this too was an expected response.

Finally, a category was also developed for unknown vocabulary. A student might have responded that the miscue was due to unfamiliarity with the vocabulary. This category was labeled *vocabulary*. Substitutions like "log" for lodge or "cannon" for canal elicited responses like "I don't know this word." This final response was more common for EL than EO students, but overall, it was a rare response for both groups. This rarity could be due to the initial vocabulary assessment used to screen students before the reading. The screening would have eliminated students whose vocabulary was substantially below the grade level passage. In this study, all of the students who participated were able to define the majority of the vocabulary terms in order to be included in the reading assessment.

Other categories that arose during open coding were more related to existing student schema rather than visual or aural similarity. Student background knowledge and experience of the world is a critical element in the construction of meaning from

text, and the RMA reflected the student's use of existing schema to explain miscues. The schema-related categories were labeled *association* and *prediction*.

The *usual category* refers to linguistic schema which provides a familiarity with certain ways of phrasing things from spoken language or from other texts. Students would comment on the frequency of a particular structure using comments such as, "It's more common," "most of the time people say ___," or "in lots of books they say _____," thereby asserting that the miscue was due to a familiarity with a certain collocation or grammatical phrasing that was called to mind. For example, a student read pack mud as "pack up mud*"* and explained that he had read books that talk about packing up bags which resulted in his using that more familiar structure "pack up.*"* Another student asserted that *"*used for" is more common than *"*used as," and that is why the miscue was made.

The category of *association* had to do with the student's own thought processes about the topic at hand. For example, students used the plural "beavers*"* instead of beaver and made comments like "there are more beavers," or "the beaver might have a family," or when producing the word "home*"* instead of house, the student responded, "a house is more of a structural building, a home can be made of anything." These types of responses showed a strong connection to personal experiences and knowledge. Students also relied on formal schema and linguistic awareness to make predictions about what might follow in the text, and miscues resulted when readers acted on the prediction rather than the visual cue. For example, a student expected the text to read *before* when it actually read *after*, resulting in a miscue that relied on prediction and produced a syntactically correct response. Another prediction based on expectation

caused a student to make a mid-sentence syntactic miscue. After reading about the loss of trees, the student set up an expectation that the text would read "May not have food," but the text actually read may have to find, creating a miscue which was "may not have to find." Ideally, while the use of prediction is an effective reading strategy, students should also be able to note the visual discrepancy and use repair strategies to address the miscue.

Table 4.20 shows examples of the most frequent response produced by each group of students during the retrospective miscue analysis.

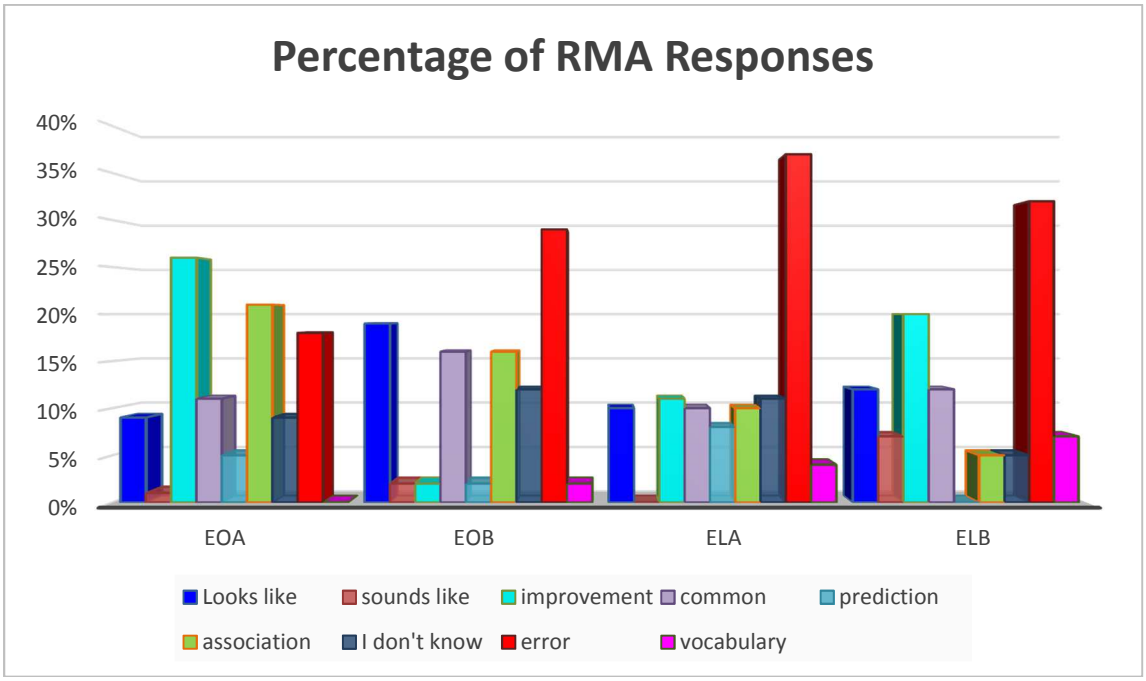
Table 4.20:
RMA responses for each group by type of response.

GROUP	MOST COMMON RESPONSES GIVEN	EXAMPLES
EOA	improvement	To say it in a more simpler way The sentence would be too short without it It seems like better grammar to me It would have sounded better to say It should be one sentence
EOB	Error	I looked up and lost my place I didn't pay attention I didn't see the [letter] I was reading too fast I got the words confused Maybe because I blinked Sometimes I can't see Sometimes I skip words When I read I leave a lot of words out
ELA	error	I was reading too quickly Because I thought of something else I messed up I thought it, but didn't say it I was rushing I think I just leaped ahead I skipped the f I didn't see it My eyes were blurry and I couldn't see
ELB	Error	Reading too fast I didn't see the I Reading too fast and I guessed

An examination of the data based on student responses shows some differences in the patterns of responses. The number one reason high-income, English only students gave for the production of miscues was that their miscues were an improvement on the original text. The remarks provided by higher-income students were explicit and specifically related to the actual structure of the text. This included comments about the structure of the text such as, “It should be one sentence,” “most paragraphs have longer sentences,” “it would have sounded better to say a part of the ground,” and “it’s better grammar.” EOA students produced this response 19 times, whereas EOB students used that explanation 9 times, ELA responded that way 6 times, and ELB students 8 times.

On the other hand, the number one reason given by all three other groups – EOB, ELA, and ELB – was that the miscue was some kind of mistake on their part (EOB =12; ELA -=19; and ELB =13). Those students gave explanations for their miscues that referred to them as mistakes on their part with comments such as, “I got the words confused,” “I was rushing,” and very frequently “I didn’t see the [omitted letter]”. Other times the miscues were attributed to factors out of their immediate control: “sometimes my eyes get blurry,” “I blinked,” or “sometimes I can’t see” (See figure 2).

Figure 2
Percentage of responses by group



The second highest reason given by the EO group in the retrospective miscue analysis was the use of association as an explanation for the miscue. Association, in this case, refers to connections to things students already know or believe are related to the topic. In other words, association was labeled when students used their linguistic or content schema to explain the miscue. For example, one student read from the text the beaver's lodge or *house*, but read aloud the phrase as "the beaver's lodge or *home*." When asked about the miscue, the student explained that "a house is more of a structural building, but a home can be made of anything." This explanation indicates a semantic distinction based on linguistic knowledge. Another student read the phrase furry animal as "funny animal." While these words are visually similar, that is not the explanation provided by the student. Instead, the student asserted that the word choice was made "because beavers are funny; they act funny." English only speakers with

higher incomes produced association-related responses 17 times, English only students from lower income homes responded this way 9 time; English learners of higher income homes 6 times, and English learners with lower income 8.

GROUP	MOST COMMON RESPONSES GIVEN	EXAMPLES
EOA	improvement	To say it in a more simpler way The sentence would be too short without it It seems like better grammar to me It would have sounded better to say It should be one sentence
EOB	Error	I looked up and lost my place I didn't pay attention I didn't see the l I was reading too fast I got the words confused Maybe because I blinked Sometimes I can't see Sometimes I skip words When I read I leave a lot of words out
ELA	error	I was reading too quickly Because I thought of something else I messed up I thought it, but didn't say it I was rushing I think I just leaped ahead I skipped the f I didn't see it My eyes were blurry, and I couldn't see
ELB	Error	Reading too fast I didn't see the l Reading too fast and I guessed

Analysis of student responses.

Examining the typical RMA responses for the above income EO students, one can see that the students have a sense of confidence and ownership of the text. This sense of self-efficacy was evident not only in the responses given by the low-income reader, but in his demeanor while explaining his miscues. The answers given by the high income English only student given in a relaxed, almost off-hand manner, with no hesitancy, as

if he was used to engaging in conversations about literacy and was accustomed to being asked for opinions and explanations.

The responses of the above-income, EO students demonstrated an awareness of themselves as readers with good reading skills. Furthermore, in addition to the sense of self-efficacy they displayed in reading tasks, they seemed to regard themselves as readers who had engaged in a variety of literacy experiences and were knowledgeable about how different varieties of written English worked. Most students made references to other literary experiences, which shows that they have a sense of identity as readers.

The first student from the above income group Josh (a pseudonym) came into the room very confidently and excitedly- perhaps because he was getting out of class, perhaps for the opportunity to do something different. He examined all the items in the room looking at and commenting on the posters and decorations. He made comments about some of the materials as things he had used before in another grade. He spoke quickly and easily chatted with the examiner before beginning. During the vocabulary pretest, not only was he able to define each of the vocabulary items , he did so using terms like “living creature” as a definition for animal and “circular area of water” as a definition for pond, but he also provided more than one definition in some cases to clarify the meaning. For example, he not only provided the example of school supplies as part of the definition for supply, but also clarified that they are anything “used to get work done” and he described a lodge not only as a type of house, but one that is often made of “materials like logs not a modern house”.

Josh’s strong sense of identity as a reader can be seen in the retrospective miscue analysis as we listened to his oral reading. For example, Josh not only noted that expressions came from other literary experiences, but he also positioned himself as an individual who has such a familiarity with text that he has learned to see recurring patterns in written

English in order to note that structures and phrasings could be considered “common.” This stance indicates a wide reading experience and an identity as a reader.

On the basis of this perceived expertise, the student saw himself not only as a good reader, but also as an expert in the varieties of text structure. In fact, this confidence and sense of familiarity with text allowed him to explain miscues as improvements upon the text based on his wide reading experiences. It seems that he viewed his judgement about the structuring of the passage to be as equally valid or even better than the original text. In this sense, he was not only confirming his identity as a capable reader, but is also confirming his status as a constructor of meaning. This is in line with both the transactional theory of reading by Rosenblatt which suggests that the reader constructs meaning from the text and research by Glover (2018) which suggests that as readers develop linguistic competence they develop ownership of the text.

Above Income English Only

Josh

	Running Record	RMA
Text	It uses sticks, leaves, and mud to block a stream.	
Student	“It uses sticks, leaves, and mud to block the stream.”	“I guess I got it from past books. It’s a common thing.”

Text - It uses sticks, leaves, and mud to block a stream.

Student – “It uses sticks, leaves, and mud to block the stream.”

RMA - “I guess I got it from past books. It’s a common thing.”

Text - The animal uses its large flat tail to pack mud into place.

Student - The animal uses its large flat tail to pack up mud into place.

RMA - There is not really any difference. I think it comes from previous experience. I might have read *packing up bags* before.

Text – the doorway to the lodge is under the water

Student – the doorway to the lodge is under water

RMA – Under water makes more sense. It seems like better grammar to me.

Text- More trees must be cut down to be used as food.

Student - More trees must be cut down and used as food.

RMA – I don't know. It sounded better.

Text – Sometimes there will be no more trees around the pond. Then the beaver has to find trees elsewhere.

Student - Sometimes there will be no more trees around the pond and then the beaver has to find trees elsewhere.

RMA – Again it's gonna be from past books. People say *and then* to me; it's more common

Text – The pond floods part of the ground.

Student - The pond floods a part of the ground.

RMA – It would have sounded better to say *a part of the ground*.

On the other hand, the other students seemed to lack a strong sense of reading self-efficacy. Many of the lower income and EL students attributed their errors to either carelessness or factors outside of their control, particularly those related to vision. For example, students often attributed the errors to losing their place or not paying attention. Interestingly, they also attributed errors to factors out of their control, often related to their physical ability to see. In the case of the student below, he specifically stated that sometimes he "can't see" as if it were a case of temporary blindness that impacted the

reading process. He also explained a miscue with “because I blinked.” The student seemed to be contending that the miscues made had nothing to do with his ability as a reader, but were simply physical events that affected his ability to read the text accurately.

This can be seen in the case of Cole (pseudonym) the student who produced the largest number of miscues. Cole came into the examining room with slight trepidation. Responses to initial warm up questions were limited to simple answers with no elaboration. His responses to the vocabulary pretest were demonstrated understanding of the terms, but a lack of familiarity with the definition framework. Most of his responses were examples or instances where the word would be used rather than a definition. For example, in defining winter he stated that “in December and January it is winter” and when defining dam he said "a beaver builds a dam so he can walk across a river.” These responses indicate some degree of understanding of the terms, but seem to indicate either a lack of depth of understanding or less familiarity with the rhetorical structure associated with giving definitions. His reading was slow and halting with a lack of appropriate phrasing

During the retrospective miscue analysis Cole provided responses that suggested that the miscues were either caused by outside factors or were not significant. One response that Cole was that the miscue was of relative unimportance. He states that even though the miscue was made the passage still made sense and that the miscue itself “doesn’t really matter.” This was his response when the miscues did not significantly impact the meaning of the passage such as reading “mud into places”

instead of *mud into place.* This suggests an essential understanding of the importance of content words over function words when reading a passage.

However, when the errors altered the meaning of the passage, Cole attributed the miscue to physical factors outside of his ability to control. When he omitted the word *for* in the phrase *food for the coming winter*, he specifically stated that sometimes he "can't see" as if a case of temporary blindness impacted his reading process. He also explained another miscue with "because I blinked." The student seemed to be contending that the miscues made had nothing to do with his ability as a reader, but were simply physical events out of his control that affected his ability to read the text accurately.

Research (e.g. Afflerbach, Cho, Kim, Crassas, & Doyle, 2013; Bandura, 1996; Protheroe, 2004) suggests that students who lack self- efficacy in their reading skills seem to lack incentive to challenge themselves and are content to just get by. This response of "it doesn't really matter" could suggest a lack of concern over accuracy. While miscue analysis suggests that if meaning is maintained, it is not a miscue that needs to be corrected, and some of the miscues do not affect meaning. However, the sheer number of miscues, thirty-six, and the slow reading pace suggest that the student frequently struggles with accuracy.

It is possible that by attributing the miscues to factors other than abilities could possibly be a self-handicapping strategy utilized by the student (Covington, 1992; Gadbois & Sturgeon, 2011; Kearns, Forbes & Gardiner, 2007) so that the student is able to maintain a sense of self-esteem. Research beginning with Bandura (1977) identified perceived control as an important factor in emotional engagement in the

classroom, motivation and self-efficacy. Attribution and academic self-concept are highly correlated and can impact academic outcomes (Erten & Burden, 2014).

Student with the most errors EOB

Text line 2 – master builders

Student – masters builders (SC)

RMA – didn't sound right, so I fixed it

Text line 4 – block a stream

Student – block the stream

RMA – It doesn't really matter; it still makes sense; same kind of word

Text line 6 – mud into place

Student – mud into places

RMA – Doesn't really matter. It still makes sense- places in the dam

Text line 9 - this mound of mud and twigs this is the

Student - twigs this is the mound

RMA – it still makes sense

Text line 11 – food for the

Student – food the

RMA – I skipped this word; sometimes I can't see; I closed my eyes and thought I said for

Text line 14- deep into the forest

Student – deep in the forest

RMA – Maybe because I blinked

Text line 15 – All this work

Student – all of this work

RMA – I wanted to make it more fluency

Text line 17 – the pond behind the dam

Student – the pond begin, behid (SC)

RMA – I kept on going back and changed it until I got it right

Text line 18 – environment becomes

Student – environment because

RMA When I read books I hear because not become

Text line 19 – all this happens

Student – all this happened

RMA - It still makes sense and it is the same length

One other interesting factor that arose when looking at the responses students provided during the RMA was that half of the students noted that the reason the miscue was made was because the students were reading too quickly. This emphasis on reading quickly could be related to the current emphasis on fluency as a measure of reading ability (Kuhn, Schwanenflugel, & Meisinger, 2010). Since the National Reading Panel noted fluency as a key feature in skilled reading, it has become emphasized in instructional and assessment decisions. What has happened, however, is that based on the use of assessments like the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good & Kaminski, 2002) and other similar assessments, the concept of fluency has been divorced from the features of prosody and phrasing and has become a test of automaticity and rate (Kuhn, Schwanenflugel, & Meisinger, 2010; Samuels, 2007). This has narrowed the focus of the meaning of fluency and has become, in the minds of many students and teachers, a goal of reading more quickly. This has a potentially negative impact on how students view "good" reading and may cause them to try to read at speeds that are not commensurate with their ability to apply their existing reading skills and strategies.

Conclusion

While there were some distinctions based on language, many of the results in miscue type and number did not reach the level of statistical significance at $p \leq .05$. The small sample size made identifying statistically significant results challenging. The greatest differences in number and types of miscues I found were between the English Only students from the below median income homes (EOB) group and all of the others. Economic status seemed to play a larger role within that group than between any of the other groups that were compared. EOB students produced more miscues and more miscues that lacked syntactic acceptability than did any of the other groups.

During the retrospective miscue analysis, the above income English only groups' responses were notably different by producing a greater number of responses which suggested that the miscues they created were actual improvements to the text. On the other hand, the English Learners and the English Only students from below median income homes also explained the majority of miscues as simple mistakes on their part based either on their own carelessness or factors out of their control.

The next chapter will discuss some of the possible factors involved in these results and provide teaching implications in order to address the discrepancies.

CHAPTER FIVE

DISCUSSION, IMPLICATIONS AND CONCLUSION

Discussion

This study examined the impact that language and socio-economic status had on the numbers and type of miscues students produced and also on the explanations that students provided for those miscues in order to examine the cueing systems the students used and their awareness of their own reading strategy use.

Number of Miscues

The first result examined the effect of socio-economic status on the number of miscues. This question is based on research (e.g. Hart & Risley, 1985, 2003) that shows that economic level has a strong correlation with reading skills and academic achievement. For a variety of reasons, children from low-income homes tend to have lower reading proficiency scores and less academic achievement (Eamon, 2002; Hart & Risley, 1995, 2003; Hoff, 2003). The impact of SES is a persistent problem that may cause students to acquire language skills more slowly and puts them at risk for reading difficulties (Aikens & Barbarin, 2008).

This research study did not find any significant results overall based on SES when the language groups were combined. However, when examining the miscues

within language groups, one major difference did arise. This distinction lies in the variation in the number of miscues within the English only group based on SES. Based on the results of the Mann-Whitney test, the low-income EO group had a median number of errors that was twice that of the English Only above median income group (M =15.56; M= 7.38). Even with such a small sample size the low-income English only students produced significantly more miscues (p = .012) than the high-income English only students

In fact, the English only students from low-income home produced more miscues than did the low-income English learners. Multiple factors could account for this surprising discrepancy. One possible explanation has to do with the fact that as learners of another language, these students are approaching the reading task with an existing familiarity of how language works. Students who have developed skills in their native language are able to access and transfer their linguistic knowledge and apply it to the new language (Cummins, 1979, 1984; Leafstedt & Gerber, 2005). A report from the National Literacy Panel noted that being able to access literacy skills in a first language can provide advantages to students learning English (August & Shanahan, 2006). In fact, research by Rosowsky (2001) shows that bilingual students are superior to monolingual students at decoding. Thus, while these students may have some of the same challenges created by their current SES, they may have the benefit of additional linguistic awareness to support their reading skills in English.

The existence of home language skills, however, does not address the question of why the English learners from homes where the income was above the average income (ELA) had more miscues than did the English learner students from homes with

incomes below the median income. There is some research to suggest that low-income English learners with less developed reading skills may want to "play it safe" and read the words on the page more carefully and not make any guesses about words they don't know (Neufield & Fitzgerald, 2001). Whereas high income students are more willing to take risks and make guesses. This could also tie into their reading self-efficacy. Research has shown that self-efficacy beliefs can influence the reading strategies selected (Tunmer & Chapman, 2002). Students who are more confident in their reading ability access a much wider range of reading strategies than those who are still developing those skills.

There is also some evidence (e.g. Farran, Lee, Yoo, & Oller, 2016; Hoff & Tian, 2005; Rodríguez, Hines & Montiel, 2009) that the interaction patterns between parent and child that we associate with socio-economic status may not correspond to the patterns that exist in different cultures. For example, in a study by Farran, Lee, Yoo and Oller (2016) they found that Lebanese mothers use more child-directed speech with infants than do American parents. Furthermore, research by Rodríguez, Hines, and Montiel (2009) noted that Mexican-American mothers do not differ in their interaction strategies when reading with their children based on SES. Both low and median income Mexican-American mothers use strategies like "enhancing attention to text, promoting interaction/ supporting comprehension, and using literacy strategies" (p. 278). This differs from the primarily directive or prohibitive speech that American low-income parents use with their children (Hart & Risley, 1995).

Types of Miscues

One might imagine that the language learners would have more syntactically related miscues due to the existing structural differences between English and the students' native languages. However, that was not the case. In the comparison of

syntactic miscues, low-income EO students not only produced more miscues than any other group, but also created more syntactically unacceptable miscues. This distinction reached a level of significance at p = .031 even with small sample size.

Visual similarity.

An interesting result was a distinction between groups based on the visual similarity of the original text and the miscue. When examining the substitutions based on visual similarity, the substitutions were classified as *highly similar, partially similar,* and *not similar* in terms of graphophonic or visual similarity. This classification is based on the number of word parts (beginning, middle, and end) that were the same in the original text and in the substitution. For example, the words busy and "buzzy" would be considered highly visually similar because the beginning and the end of the word are identical, whereas live and "have" share only an ending and would be considered partially similar.

I found that the EOA group made many more substitutions that were highly visually similar than did the EOB group. This means that the EOA students produced substitutions that contained at two parts of the word that were the same. For example, a student substituted the word "leaping" for the text word leading. The EOB group, on the other hand, had a majority of substitutions that were only partially similar with only one portion of the word the same such as the substitution of the word "and" for the text word all which only shares the same initial letter.

While both EOB and EL students made syntactic miscues, the nature of those miscues differed. The low-income EO students tended to make syntactic miscues based on the visual similarity of the words. For example, instead of reading doorway to

the lodge, a student read “down way,” or instead of saying in the middle, a student read “it the middle.” These substitutions are likely based on using the visual cueing system without accessing the other cueing systems.

On the other hand, the English Learners had a few miscues based on visual similarity. The majority of their miscues were based on language differences. Many of the syntactic miscues made by the EL students were based on incorrect use of function words. Function words are small words like prepositions and articles that, unlike content words which carry meaning, serve primarily a syntactic purpose. Thus, while the grammatical acceptability is impacted, content words are left in place. Some examples produced by the EL students were dropping the preposition in the phrase feed on trees, or saying “mound and twigs” rather than mound of twigs. The omission and substitution of function words is not surprising as function words are not generally attended to by English Learners for a variety of reasons. In trying to create meaning through the reading of a text, it is content words that are central to interpretation. In addition, function words are not generally acquired through incidental vocabulary learning (Graves, August & Mancilla Martinez, 2012; Schmitt, 2010).

It is possible that the EL students are benefitting from the already existing linguistic knowledge they have developed from their first language. Research suggests that the knowledge of how language works and how to make meaning are elements already developed in the EL student from knowledge of the home language. This previous language experience can provide English learners with advantages in already existing linguistic awareness that the EO student does not have access to (Cook, 2010; Nemati & Taghizadeh, 2006).

The statistically significant distinction in the syntactic acceptability of the miscues by the English Only Above median income group and the English Only Below median group corresponds with other research which ties syntactic development to the oral language input received by children at home. (Huttenlocher, 2005). As previously mentioned, the oral language experiences children from low income homes in the United States have frequently provide less complex grammar and less varied vocabulary than those of middle-class homes (Hart & Risley,1995; Hoff, 2003, 2006, 2012). Higher income students have been shown to outperform students from lower income homes in grammatical development and comprehending complex syntactical structures regardless of cultural differences (Hoff, 2013). This finding is significant as numerous studies have shown that syntactic awareness has a significant impact on reading comprehension and achievement (Lesaux, Lipka, & Siegel, 2006; Nation & Snowling, 2000; Roskos & Neuman, 2014).

These results could indicate a more balanced approach of cueing systems by the EOA group, as suggested by research on reading proficiency, or the results could indicate a less adept use of the visual cueing system or decoding skills by the EOB group (Beatty & Care, 2009).

Explanations for miscues

When explaining miscues, there were two distinct patterns based on socio-economic groups and language. The higher income English only students said they were improving the text in some way by making sentences longer or by improving word choice. Glover (2018) suggests that as students develop linguistic competence, as they

go the reading process they develop a sense of ownership over the text. This is also in line with Reader Response theory which suggests that the reader holds as much control over the construction of meaning as does the text itself (Rosenblatt, 1978). On the other hand, all of the other groups explained the miscues by error on their part – either by an error they created "I messed up" or by something out of their control like "sometimes I can't see."

In the group that claimed error as the explanation for miscues one common explanation for the creation of miscues was that the student was reading too quickly. Half of the students in this study from all language and economic groups used this explanation for miscues they made. One cannot help but wonder whether the increasing shift on standards and the emphasis put on fluency in the report produced by the National Reading Panel (National Institute of Child Health and Human Development [NICHD], 2000) contributed to this pattern. Fluency has become one of the major pillars driving instruction. According to Kuhn, Schwanenflugel, and Meisinger (2010), the increasing use of assessments like the Dynamic Indicators of Basic Early Literacy Skills (DIBELS; Good & Kaminski, 2002) focus almost exclusively on automaticity and rate to the exclusion of other factors of fluency. This shift to focus on rate and automaticity had narrowed the definition of fluency. In fact this focus on rate could lead to excessive rate which could actually negatively impact reading comprehension (Kuhn, Schwanenflugel, & Meisinger 2010; Rasinski, 2010; Walczyk & Griffith-Ross, 2007). Researchers (Basrana, 2013; Rasinski, 2010; Walczyk & Griffith-Ross, 2007) have noted that the other features of fluency including prosody and phrasing are more closely tied to effective comprehension. This instructional emphasis on automaticity and accuracy may have unintentionally encouraged students to focus on speed and could actually be interfering with the ability to use compensatory skills and understand the text.

Implications

There are a few areas of distinction in the use reading skills and strategies that stand out in the results of this study. First, the low-income English only students (English-speaking students from lower-income homes) relied heavily on graphophonic cues to the exclusion of the other cueing systems. However, they did so ineffectively, creating miscues that were only partially similar to the original text and that were syntactically unacceptable (creating major changes in meaning). This overreliance is, unfortunately, a common problem. Struggling readers, unlike strong readers, rely almost exclusively on graphophonic cues (Vandever, 2009). Similar results are found with English learners (EL) students who develop decoding skills well but lag behind their monolingual peers when it comes to reading comprehension (Nakamoto, Lindsey, & Manis, 2007). Compounding this issue is the fact that often the reading programs used in low-income environments frequently use direct instruction with a heavy emphasis on decoding, which leads students to utilize graphophonic cues without awareness of syntactic or semantic acceptability (Wiltz & Wilson, 2005).

This overreliance on graphic cues can greatly impact reading comprehension. Priebe, Keenan and Miller (2010) in their study of English-speaking fourth graders found that students who rely on graphic cues without using context or semantic cues had the lowest levels of reading comprehension. Research by Beatty and Care (2009) suggests that the ability to use these skills effectively is what distinguishes the reader who is below grade-level expectations from one who meets or exceeds those expectation.

In addition, to the challenges presented by reliance on visual cueing systems, even developing the awareness of sound-symbol relationship presents an extra

challenge to students learning English. Learning to read in English is complicated by the fact that, unlike other languages that are considered transparent (meaning having consistent one-on-one sound symbol correspondence), English has a notoriously inconsistent orthography, as evidenced by the pronunciation of the words *cough, bough, through,* and *though*. Because of this inconsistency, learners of English may take longer to develop fluent word reading skills (Garcia & Cain, 2014).

While there is some debate on the primacy of graphophonic skills in overall reading comprehension (see for example, Beatty & Care, 2009), there can be no debate that these skills are an essential component of successful reading. As Beatty and Care (2009) demonstrated, even highly proficient readers utilize the graphophonic cues when approaching unfamiliar words. No text can be read without the ability to decode the words contained within. The debate is whether the overreliance on visual cues is due to a struggle with sound-symbol correspondence or whether the instructional emphasis on decoding skills is at the detriment of the other cueing systems.

A second important finding of the current study is students' use of associations or schema as a comprehension tool. English learner (EL) students made fewer associations with the text than did the English only (EO) speakers. Instead, they relied almost exclusively on the text itself. Research has shown that students from low SES environments and EL students can master the specific sound-symbol relationships as well as students from middle-class EO homes, but the content knowledge can cause long-term difficulties – especially as content knowledge becomes more critical to academic learning (Geva, & Yaghoub Zadeh, 2006; Lesaux, 2012; Snow, 2002). As Lesaux (2012) explains, knowledge-based competencies are "key sources of lasting

individual differences in reading outcomes, particularly among children growing up in low-income and non-English-speaking households" (p. 73).

Evidence from the initial vocabulary assessment in this study shows that the English only students from above median income homes had much more familiarity with the topic of the text than did any of the other groups and were able to provide information about beavers far beyond what was in the text, including facts such as beavers are rodents and that their fur is water-proof. This background knowledge is a key factor in linking new content to existing schema and creating deeper reading comprehension (Al-Issa, 2006; Anderson & Pearson, 1984; Carrel & Eisterhold, 1983; Gibbons, 2002). Adequate background knowledge was less prominent in the other groups of students studied.

Furthermore, these English only students from lower-income homes and students who are learning English may also lack familiarity with the format of academic discourse. Snow and Uccelli (2008) assert that when discussing the complexities of the academic register, we may think of the challenges faced by English learners; however, while academic language poses more difficulty for language minority students and low-income English speakers, it is an area that needs to be addressed for all students – especially as the content and syntax in academic texts become more complex and unfamiliar. Academic language is a style of discourse that is not often used outside of the educational arena. It is distinct and contains specific linguistic features including specialized vocabulary, grammatical structures, and rhetorical patterns (Franz, Starr & Bailey, 2015). Thus, it is an area of instruction that all educators must address as their students progress through new and increasingly challenging academic content.

The results of this study also show that there is a significant difference in the syntactic acceptability of the miscues produced by the higher-income monolingual English speakers and the other groups of students. The English-speaking students from lower-income homes students and all of the EL students produced more syntactically unacceptable miscues than did the monolingual English speakers from higher-income homes. This reveals a need for need for instruction as research reveals a strong link between students' syntactic awareness and their reading achievement (Martohardjono, et al., 2005). Better readers demonstrate higher syntactic awareness than poorer readers (Tunmer & Bowey, 1984) and also possess more grammatical knowledge than their less skilled peers (Waltzman & Cairns, 2000; Roskos & Neuman, 2014). Syntactic awareness is a critical feature in reading comprehension. Strong syntactic awareness allows readers to draw on their metalinguistic knowledge and use context clues to make predictions about what will come next. (Lesaux, 2006).

In this author's opinion, the most surprising and instructionally relevant results are those which suggest a lack of self-efficacy and agency in the reading ability of the English-speaking students from lower-income homes group. This is a critical issue given that numerous studies have shown that students' self-efficacy beliefs can be strongly associated with reading development and overall academic achievement (Pullmann, & Allik, 2008; Valentine, DuBois, & Cooper, 2004). In addition to the low-income, monolingual English speakers, students learning an additional language can also lack confidence in their ability to read in an additional language (Hedgecock & Ferris, 2009). Given this, increasing self-efficacy can be an important tool in strengthening students' reading comprehension and academic achievement (Barkley,

2006). Academic self-efficacy has been shown to be responsive to positive educational experiences, so teachers have the potential to greatly impact students' academic self-efficacy beliefs (Pajares & Schunk, 2001). For English-speaking students from lower-income homes students and EL students, increasing their self-efficacy can have a profound impact on their reading performance and academic achievement.

Recommendations for teaching

In her seminal theory of reading Rosenblatt (1986) asserted that although the words printed on the page are important, the knowledge and experiences that the reader brings to the text are also critical elements. As she viewed it, reading comprehension results from a transaction between reader and text. In order to facilitate comprehension, teachers must show students how to use what they know and what they read in order to create meaning.

Use academic conversation.

One of the most powerful tools in the teacher's repertoire is the simple act of conversation. Academic conversation between students and teachers has the power to build students' background knowledge, enlarge their vocabulary, increase the grammatical complexity of language to which students are exposed, and build students' academic self-efficacy beliefs. In fact, Snow and Uccelli (2009) assert that exposure to speech that includes features of academic discourse and academic genres is essential to mastering academic language. For this to happen teachers must move beyond using the traditional nominating of one student to provide the one correct answer. Instead, teachers must move toward the instructional conversation model for reading (Tharp & Gallimore, 1991). In these types of conversations the teacher activates schema,

provides necessary background information, and elicits longer, more complex responses from students. The teacher must guide, question, and coax students to engage in a focused discussion of the content being studied. While the conversations are focused, the teacher serves as a facilitator by setting goals, guiding the conversation, repeating key ideas, and aiding students to express themselves.

Oral language and listening comprehension skills have been highly correlated with reading comprehension skills (Biemiller, 2003; Garcia & Cain, 2014). This is especially true for English learners (Bialystok, 2001). Rich oral language can be used to expose students to the features of academic discourse and language (Snow & Uccelli, 2008). Teachers can embed academic vocabulary in even the simplest of tasks such as asking even very young students to sit around the *perimeter* of the rug. Because syntactic complexity is a critical element in the development of academic language skills, students need modeling of the syntactic complexity they will face when reading academic texts. Embedding complex syntax in oral explanations and discussions within specific contexts, as well as using rich and complex texts in class, can scaffold the process of learning these structures. The syntactic complexity of teacher speech can affect the language development of both EO students and students who are learning another language (Gamez, 2009).

Develop associations.

As stated in the beginning of this paper, one of the chief causes of the achievement gap between socioeconomic groups and language learners is a language gap. Hirsch notes, however, that there is an incredibly strong link between language and the world knowledge to which the language refers (2003). In teaching content,

teachers should also be teaching the language necessary to interpret it. In teaching language, teachers should be making the essential connections between the words and the ideas that they represent and help students place the words and ideas in meaningful contexts. This world or content knowledge is essential to effective reading comprehension. To some extent, every text assumes a level of familiarity with knowledge of the cultural or physical world presented in the text (Hirsch, 2003). As Roskos and Neuman (2014) note, vocabulary is "merely the tip of the iceberg (508). Each term children acquire is part of a network of concepts that children use to develop categories and create meaningful and long-lasting knowledge connections that are essential to reading comprehension (Anderson & Pearson, 1984; Bartlett, 1932; Carrell, 1984).

In order to facilitate the development of vocabulary and content knowledge, teachers should provide opportunities to experience the words and concepts orally before asking students to go to the decontextualized text. Providing students the opportunity to hear words that will be part of the topic will ease the challenge of unknown vocabulary in the text. Read-alouds by the teacher to introduce the topic will also provide the sound-symbol correspondence that the reader's inner voice can mimic. Discussion, as well as small group conversations between students provides students with the opportunity to hear and practice the new words and understand the concepts to be covered. Talking with peers encourages more interaction and engagement and can provide content in different ways that may be more easily understood (Goldenberg, 2008). All learners, regardless of home language, need time to verbally process new

ideas, and doing so with other students provides them with a community of peers to help them on their journey.

In addition, wide reading serves the dual benefit of developing both the deeper conceptual understanding of academic terms and increasing student reading fluency. In the classroom, reading comprehension and vocabulary development are best served by spending extended time on reading and listening to texts on the same topic and discussing the facts and ideas in them. Vocabulary and concept development are incremental and require repeated encounters in order to fully develop. The more time spent interacting with the words and texts, the better the understanding (Beck, McKeown, & Kucan, 2005; Sobolak, 2011). Each time a student explores a topic in a new way, the depth of understanding is increased (Coyne, McCoach & Kapp, 2007; Sedita, 2005. This can be done through the processes of direct instruction, seeing words in context, creating personal definitions with illustrations for new words and ideas, discussing the text in small groups, summarizing and clarifying key ideas, and wide reading on a single topic from a variety of sources.

Research has proven that classroom discussion, including small group and whole-class formats, has a powerful literacy impact (Nystrand, 2006). Simple tasks such as *think-pair-share* or *turn and talk* should be a regular part of classroom reading experiences. Such activities allow students to hear the words and clarify content which will develop both vocabulary and concept understanding. Increasing oral proficiency of EL students not only expands their vocabulary range, but also increases their language learning skills and strategies, especially academic ones (Genesee, Lindholm-Leary, Saunders, & Christian, 2005). To further this process, instructional conversations should

be “teacher scaffolded, small group discussions that have a clear focus and provide students with opportunities for extended oral discourse” (Bower, Fitts, Quirk & Jung, 2010). Instructional conversations aid students in developing the linguistic and conceptual knowledge necessary for comprehension. Students speak and discuss, the teacher builds upon those discussions by guiding students to greater understanding, and s/he provides a model of content language use to further vocabulary understanding. This model aligns with Vygotsky’s Zone of Proximal Development (1978) and Krashen’s Input Hypothesis (1977, 2003) by starting from where the students are and expanding their awareness.

Build background knowledge.

One critical feature for developing understanding is developing the background knowledge of learners in order to help them build on and connect new information. As noted earlier, the EL students made fewer associations than did the EO students. Part of this may be linked to unfamiliarity with the vocabulary and content of the passage. Building familiarity with the text and academic text structure is essential for low-income and EL students (Lesaux, 2012). In order to counter this lack of familiarity, both groups could benefit from using materials that tap into their existing content and linguistic schemata (Jamalinesari & Ali, 2015). There is an old teaching tip for teachers of EL students: when teaching unknown content, use known language, and introduce new language when teaching known concepts. This allows EL students to focus on one task at a time – either language or content. Although used as an axiom for EL teachers, this technique can be used by all teachers, especially teachers of students at risk.

Short and Fitzsimmons emphasize the critical nature of developing background knowledge and schema activation (2007). Providing students with schema-activating tasks are powerful aids to comprehension. The use of multimedia and realia are powerful in developing comprehension. Having students look at pictures and videos or actual objects (such as the touching of a beaver pelt) jumpstart the conceptual development for even a limited English speaker or a child who has never stepped out of the city. Similarly, the use of picture books with older students can serve as a way of building content area background knowledge in a less linguistically challenging way. Numerous excellent picture books exist in all content areas including history, science, and math. For example, Eve Bunting's *The Blue and the Gray* can serve as an introduction to a study of the Civil War in the United States, and Amy Axlerod's series of pig books (Pigs on a Blanket, Pigs Go to Market, etc.) can aid in the development of mathematical concepts. Many professional books including *The Power of Picture Books: Using Content Area Literature in Middle School* (2009) are available to guide teachers in using this powerful tool for developing background knowledge.

In order to counter this lack of familiarity, both groups could benefit from using materials that tap into their existing content and linguistic schemata (Jamalinesari & Ali, 2015). One method for achieving this is structuring activities that use family and community experiences in order to bridge the academic gap. (Al-wossabi, Azizifar, Roshani & Gowhary, 2014). For example, developing understanding of the compare-contrast rhetorical pattern can easily be achieved by beginning with known elements like family or school. These techniques can serve as a starting place for developing

conceptual understanding of the academic forms and structures which can then be applied to concepts and topics being studied in school.

Similarly, numerous studies have shown that providing pre-reading activities can activate schema and help students to make content connections. Pre-teaching vocabulary can assist in developing the vocabulary and background necessary to understand academic texts. However, this must include more instructional support than merely providing a list of vocabulary terms and definitions. Children must be immersed in rich verbal interactions around the content, and teachers must provide explicit, thorough vocabulary instruction (Beck, McKeown, & Kucan; 2013). These activities are essential in promoting reading comprehension for low-income and EL learners (Ajideh, 2003; Al-wossabi, Azizifar, Roshani & Gowhary, 2014)

Build self-efficacy through RMA.

One of the critical issues for EL students and students from low income homes is a lack of self-efficacy. Self-efficacy beliefs impact all areas of academic experience including motivation, persistence, strategy selection, and expectations about what they might gain from the reading (Goodman & Marek 1996; Schraw & Bruning 1996, 1999). For this reason, students must learn to see the miscues that they make in reading as their growing use of strategies to gain knowledge and not as failures to perform a task appropriately. Many students have a fixed system belief – either they are good readers or not, and it is up to educators to show that they already have the tools to continue to learn and to become better readers (Johnston, 2012). Retrospective Miscue Analysis (RMA) is a powerful tool in developing this belief system. RMA can help students to

value themselves as readers, to see what they are thinking, and to recognize that they do have reading strategies and strengths (Almazroui, 2007).

RMA has the ability to increase the motivation and achievement of struggling readers (Moore, 2004) by providing readers with critical insight into the reading process and identifying reading strengths. RMA enables readers to examine their own reading processes and become consciously aware of and value their own reading strategies. It helps readers to feel empowered to examine and select their own reading processes (Goodman & Marek, 1996). For struggling readers, this process empowers students to select and execute reading and repair strategies and develop metacognitive awareness (Barkley, 2006; Black, 2004; Moore & Aspergen, 2001). Instead of viewing themselves as "struggling readers, they begin to see themselves as just readers "who miscue, correct, and read for meaning (Osborne & Johnson, 2017). As Rasinski and Hoffman (2003) assert, the use of procedures like RMA encourages "students to become more active monitors of their own reading holds significant promise for the development of metacognitive and strategic reading abilities" (p. 518). This procedure has the potential to positively impact their identities as readers by instilling confidence and leading to more effective and satisfying reading experiences.

Balance reading strategy instruction

One key academic element that was noted in the current study was syntactic acceptability. Students in this study relied extensively on the visual cueing system while reading the passage. In order to make the choices of reading strategies, students need to have explicit training in strategy use. Students may need more explanation and practice using a variety of strategies so that they will have a wider range of strategies

from which to choose (Aghaie & Zhang, 2012; Dabarera, Renandya, & Zhang, 2014). Both Vygotsky's theory of the Zone of Proximal Development, or ZPD, (1978) and Krashen's Input Hypothesis for language learners, or i+1, (1977, 2003) emphasize the importance of the more experienced other providing students with assistance in gaining cognitive skills such as comprehension strategies. Numerous studies have shown that specific instruction in reading strategies has the power to increase metacognitive awareness and increase reading comprehension (Aghaie and Zhang, 2012; Dabarera, Renandya, & Zhang, 2014; Whalen-Suh and Rainey, 2010). Reading strategy training had a strong positive effect on L2 readers' comprehension (Olson & Land, 2007). In fact, Olson and Land (2007) found that EL students receiving cognitive strategy training outperformed the control group in writing, standardized tests, and grade point averages. Similarly, James (2010) found that modeling metacognitive strategies led to significant improvement in literacy performance. In addition to literacy performance, instruction in metacognition can raise metacognitive awareness and improve reading comprehension (Lai, 2011).

Focus on all aspects of fluency

One common explanation for the creation of miscues was that the student was reading too quickly. Half of the students in this study from all language and economic groups used this explanation

Limitations

The development of reading skills and academic achievement is influenced by a multitude of factors not addressed by looking at only language and SES. One issue is the impact of the educational attainment level of the parents. Research has shown that

parents' educational level can significantly impact child language development. Demographic information was collected from the families involved in the study. While the majority of the parents of the monolingual English speakers from higher-income homes had some college education, not all parents did. The majority of the parents of the English-speaking students from lower-income homes had not attended college, but some did. This lends itself to further analysis in order to discern the impact of parental education levels within economic groups.

Another challenge in the study was the small sample size. In order to determine the true significance of each of these factors, I would need to conduct the study with a much larger sample size and ideally, have students from multiple sites to account for any potential school-related differences in the population based on location or school environment.

In addition, the area of self-efficacy could be a place for further research. While I believe self-efficacy to be a key factor in the types of responses given based on the RMA and research on self-efficacy, an additional self-efficacy survey could confirm these presumptions and provide additional insights into student beliefs about their own reading abilities.

As academic self-efficacy is responsive to changes in instructional experience, teachers play a crucial role in students' development and use of academic competencies (Pajares & Schunk, 2001; Robbins et al., 2004). Teachers who individualize and tailor classroom instruction to each student's academic abilities encourage children to estimate their progress according to their own internal standards (Pajares, 2002).

Conclusion

While this research study did not provide many significant differences in the types of miscues produced by groups based on language or SES, it did suggest some significant differences in language skills and self-efficacy based on the number of miscues and reader responses. English-only students with above average incomes showed a greater command and ownership of the text demonstrated by the fact that they believed that the text was theirs to alter and improve. In order to counteract some of the challenges faced by English-speaking students from lower-income homes and EL students, it is important that we instruct students in not only how to read, but also teach them the essential features of what they are reading: words, language patterns and background knowledge“(Hirsch, 2003). Teachers need to model comprehension behaviors through the use of oral and guided reading (Spenger, 2013). In addition, students need to be provided with tools to aid comprehension such as pre-reading activities like deep vocabulary study and concept maps to activate and develop the schema necessary for acquiring new information.

In addition, most subject area teachers are not consciously aware of the challenges produced by the specific language structures associated with academic English. However, once a teacher becomes aware that many students may have a more difficult time learning the words and structures of academic language, they have the power to implement strategies to help create a better chance of academic success for their students (Zweirs, 2014).

Finally, students need to engage in activities that focus on their knowledge and strengths as readers rather than on their challenges. RMA is one activity that can

help students to see themselves as active participants in the creation of meaning through text.

In closing, I would like to leave the reader with an important conclusion on the critical nature of reading skills. Ford and Quinn state, “The choices that students make to participate in learning to read and reading to learn will affect their abilities to go to college, obtain a driver’s license, obtain a job, or support their families, in general, to able to read and function in today’s society” (2010). Thus, reading is a critical skill that goes beyond the demands of the classroom. The ability to read well can affect not only academic performance, but can also impact the ability to contribute and succeed in a literate society.

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APPENDICES

Appendix A - Assessment Scripts

Script for vocabulary pretest

"I have some lists of words that I want you to read one at a time. Some of the words will be easy for you, and some I expect to be very hard. Don't worry. You are not expected to know all of them. If you don't know a word right away, try your best to figure it out. I cannot help you in any way, and I cannot tell you whether you are right or wrong.

Just do your very best. Are you ready?"

Script for oral reading

You now get to show me how you can read on your own.

"Because my job is to make sure I remember all the things you do as a reader, I'm going to write notes and record this. This will make sure I don't miss any of the great things you do. Since this is your time to show me who you are as a reader, I can't give you any hints or any help. If you come to a word you don't know, do your best and keep on going. Do you understand so far?

APPENDIX B

VOCABULARY PRETEST

Read the list of words silently to yourself. Then I will ask you to tell me what you know about each word.

1. food
2. winter
3. animal
4. dam
5. builder
6. beaver
7. pond
8. form
9. canal
10. mound
11. forest
12. supply
13. environment
14. lodge
15. stream

APPENDIX C

VOCABULARY PRETEST VERSION TWO

1. one
2. book
3. name
4. map
5. home
6. food
7. grow
8. star
9. city
10. school
11. animal
12. begin
13. money
14. cloud
15. holiday

APPENDIX D

VOCABULARY SCORING GUIDE

3 Points: A precise definition or a synonym

Example - immigrant – someone who leaves their own country and moves to another

disinfectant – something that kills germs

2 Points: An example of the concept, a specific attribute, defining characteristic, or function

Example – immigrant – like the Hmong kids in my school

disinfectant – you use it to clean wounds

1 Point: A general association, isolation of a word part, or personal association

Example - immigrant – we talked about that in my history class

Infectious – something that infects

0 Points: Sound-alikes, unconnected responses, no response/or "I don't know"

Hard - card

Based on Leslie and Caldwell, 2010, pp 49-51

APPENDIX E

READING PASSAGE

The Busy Beaver

Have you ever heard someone say "busy as a beaver"? Beavers are very busy animals and they are master builders. This furry animal spends its life working and building. As soon as a beaver leaves its family, it has much work to do.

First, the beaver must build a dam. It uses sticks, leaves, and mud to block a stream. The beaver uses its two front teeth to get the sticks. The animal uses its large flat tail to pack mud into place. A pond forms behind the dam. The beaver spends most of its life near this pond.

In the middle of the beaver's pond is a large mound. This mound of mud and twigs is the beaver's lodge or house. The beaver's family is safe in the lodge because it is well hidden. The doorway to the lodge is under the water. After the lodge is built, the beaver still cannot rest. More trees must be cut down to be used as food for the coming winter. Sometimes there will be no more trees around the pond. Then the beaver has to find trees elsewhere. These trees will have to be carried to the pond. The beaver might build canals leading deep into the forest.

All this work changes the land. As trees are cut down, birds, squirrels, and other animals may have to find new homes. Animals that feed on trees lose their food supply. The pond behind the dam floods part of the ground. Animals that used to live there have to move. However, the new environment becomes a home for different kinds of birds, fish, and plants. All this happens because of the very busy beaver.

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APPENDIX F

RETROSPECTIVE MISCUE ANALYSIS QUESTION

Let's listen to the tape and see what we hear. Why do you think I stopped the tape? Let's listen again together and see if we hear the same thing.

1. What does what you read mean?
2. Does the sentence make sense?
3. Does what you read sound like language?
4. Did you correct what you had? Why did you correct it? Should you have corrected it?
5. Did what you read look like what is in the text? Did it sound like it?
6. Why do you think you read it that way?
7. Did that miscue affect your understanding of the text?

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APPENDIX G

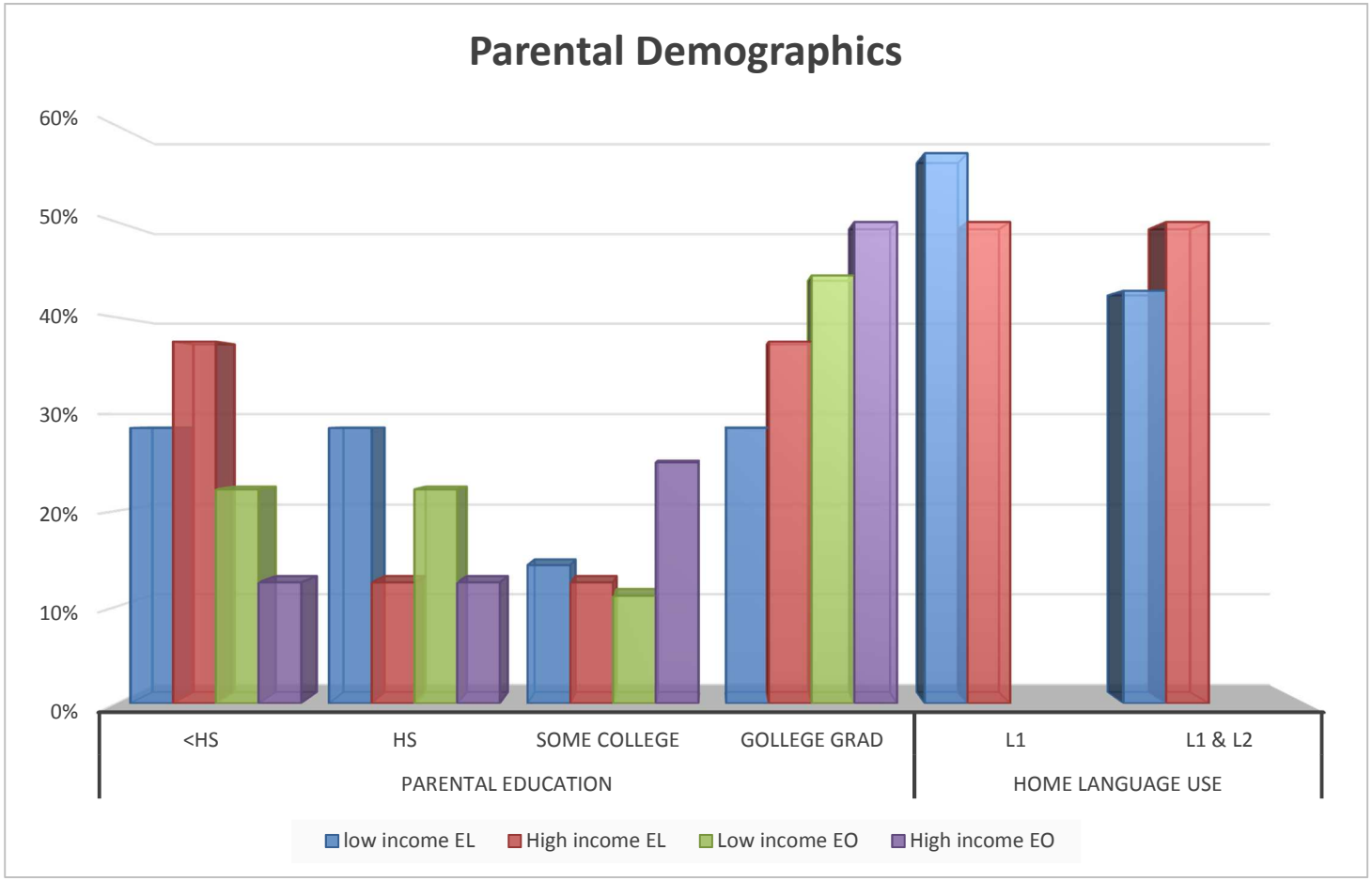
MISCUE ANALYSIS WORKSHEET

Student name _____ label _____ SES _____

Line #	Text	Miscue	Omission /Insertion/	Substitution	Visually similar			Miscue semantically appropriate			Miscue syntactically Appropriate		Self-Corrected ?
					high	partial	none	no change	Partial change	major change	Y	N	
Column Total													
Total Miscues													
Column Total/Total Miscues=%													

APPENDIX H

PARENTAL DEMOGRAPHIC INFORMATION



VITA

Kelly Ilene Boggs Cory

Candidate for the Degree of

Doctor of Philosophy

Dissertation: ONE ACADEMIC ENGLISH FOR ALL: A STUDY OF THE CUEING SYSTEMS USED IN READING ACADEMIC TEXTS

Biographical:

Education :

Completed the requirements for the Doctor of Philosophy in Education at Oklahoma State University, Stillwater, Oklahoma in July, 2018.

Completed the requirements for Master of Arts in TESL at Oklahoma State University, Stillwater, Oklahoma in December, 1990.

Completed the requirements for Bachelor of Science in Elementary Education at Oklahoma State University, Stillwater, Oklahoma, in 1984.

Experience:

2009 – Present	Adjunct Instructor/Tutor	Tulsa Community College	Tulsa, OK
2012 – 2018	Graduate Teaching Assistant	Oklahoma State University	Stillwater, OK
2007 - 2009	ESL Instructor	University of Missouri	Columbia, MO
2002 - 2007	ELL Master Teacher/Trainer	Tulsa Public Schools	Tulsa, OK
2003	Adjunct Instructor	University of Central Oklahoma	Tulsa, OK
2001 – 2002	4th/5th Grade Instructor	Newcomer International School	Tulsa, OK
1991 – 2001	ESL Instructor	University of Missouri	Columbia, MO
1991	Lecturer	Oklahoma State University	Stillwater, OK.
1988 - 1990	Graduate Teaching Assistant	Oklahoma State University	Stillwater, OK.
1987 - 1988	Fourth Grade Teacher	Copenhagen Int'l Junior School	Copenhagen, DK
1986 - 1987	Fifth Grade Teacher	International School of Trieste	Trieste, Italy

Professional Affiliations and Training:

- SIOP Trained and SIOP Trainer
- TESOL – Teachers of English to Speakers of Other Languages
- OKTESOL – Oklahoma TESOL
- OABE – Oklahoma Association of Bilingual Educators