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The Effects of Explicit Morphology Instruction on Vocabulary Skills in Four Struggling Middle School Readers

By Lauren S. Wiley

A Graduate Field Experience

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Abstract

The intervention program created for this case study was centered on teaching four middle school students, from an urban, public school in the Midwest. Three of the participating students were identified as students with specific learning disabilities. One student was identified as having a health impairment. The Upper Level Spelling Inventory assessment from the *Words Their Way* program (Flanigan, Hayes, Templeton, Bear, Invernizzi & Johnston, 2011) and a teacher created spelling test was used as a pretest and posttest. The intervention group met over the course of six weeks, for thirty minutes, twice a week. The students who participated in this study demonstrated a moderate increase in spelling common words with prefixes and suffixes.

GLOSSARY

Morphology- the study of how words are formed

Affixes- a word part added to the beginning or end of a word that can modify its meaning

Prefixes- a word part added to the beginning of a word

Suffixes- a word part added to the end of a word

Common Core State Standards (CCSS)- a statewide set of academic standards that outline learning goals and skills for grades K-12

FAPE- Free Appropriate Public Education, an educational right of children with disabilities

IDEA- Individuals with Disabilities Education Act , part of the federal legislation that requires children with disabilities receive a free and appropriate public education designed to meet their individual needs

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Chapter One

Introduction

Strong literacy skills are something many take for granted. Most of us have vague memories of singing the alphabet and learning our sounds; we all remember writing book reports and late nights spent typing research papers and lab reports. However, not all students are so lucky. Many children, especially those living in impoverished, urban neighborhoods face many difficulties that are often more important than finishing their homework. Schools were meant to be a safe, stable environment where children, no matter their home lives, could focus on bettering themselves. Unfortunately, with limited budgets and outdated resources, overworked teachers and crowded classrooms, urban schools are struggling to provide the best learning environment for their students. Furthermore, students with identified learning disabilities or other health impairments require instruction tailored to meet their specific learning needs. As a teacher, I have tried to focus on only what I could control. I could not change the circumstances my students came from or influence my school district's budget, but I could control what my students learned and how they learned it when they entered my classroom. In order to make that time count, I needed to use instructional strategies and activities that were both engaging and supported by research. The following chapters will outline and discuss my attempt to contribute to the ever expanding research on urban students and how they learn best.

This case study will investigate the benefits of teaching morphology, the study of how words are formed, to a group of middle school students in an urban school setting. Stowe (2013) described morphology as the "segmenting of words into affixes (prefixes and

suffixes) and roots or base words, and the origins of words" (p. 1). During this intervention program, the participating students were introduced to common prefixes and suffixes and learned how to combine them with base or root words in order to create new words. Lesaux (2009) stated that "students who understand how words are formed, by combining prefixes and suffixes and roots, tend to have larger vocabularies and better reading comprehension" (p.1). The following chapters will investigate the benefits of understanding morphology as a way to support vocabulary development and review research connecting these skills to reading comprehension.

Overview of Participating Students

During the 2013-2014 school year, I taught the replacement curriculum Language Book D (Greene, 2015) to a group of 6th and 7th graders. They all attended the same urban public elementary school and shared the same teachers for all subjects. Since book D was the highest level available at the middle school level, I worried about the kind of literacy support I could provide these students the following year, 2014-2015. From this group of students, four showed interest in participating in an intervention program based off of some of the components of the Language program. All four of these students needed specialized support to increase their reading comprehension, fluency and vocabulary skills. A review of cumulative records for all four students was completed prior to the start of the intervention program. All four were significantly behind in the area of comprehensive literacy and appeared to be quality candidates for this intervention. My students: Ricky, Elle, Annie and Devon were given pseudonyms in order to protect their confidentiality.

Connection to Special Education Law

The law established under the Individuals with Disabilities Education Improvement Act (IDEA, 2004) provides guidelines for ensuring equal access to a free, appropriate, public education (FAPE) for anybody identified with a disability. My participating students were all identified as having a disability that interferes with their ability to learn at the same rate as their peers. I was part of a team that helped develop their IEPs, also known as individualized education programs, in order to address their specific needs. Under Federal law, students with disabilities were also expected to be taught in the least restrictive environment (LRE) possible. This means that they must be provided with the services they need to access the same general education curriculum as their nondisabled peers to greatest extent possible (Friend, 2011). It was my hope that participation in this intervention group would provide these four students with some of the skills they needed to engage in their general education classes.

Connections to Previous Research

Graves, Brandon, Duesbery, McIntosh and Pyle (2011) found that students with special education needs "benefit from intensive small-group instruction in phonemic awareness and decoding, fluency building, reading comprehension, and vocabulary enrichment" (p. 73). In order to appropriately address each student's needs, working in a small group was essential. Kelley, Lesaux, Kieffer and Faller (2010) identified three key principles for effective vocabulary instruction: focus on a small number of words, target high-frequency words that students will encounter across all subjects (ex. Interpret,

summarize, inference), and lastly, spend time teaching words, but also focus on teaching "word learning strategies" (p.6). This meant that I had to narrow my focus and target only the most common affixes when designing this program. I also had to choose only one or two word building activities and strategies for my students to master. Education researcher, Nonie Lesaux (2009) determined that teaching students to "take unfamiliar words and break them down into smaller parts, or morphemes" are more likely to successfully define unknown words (p.2).

Conclusion

Four students from a replacement reading curriculum were identified as needing additional literacy support. They participated in a six-week long intervention program focused on increasing their reading comprehension and vocabulary skills. During this time they received structured, explicit instruction in morphology within a small group setting. This first chapter included a brief overview of the student group as a whole and future chapters will provide a more detailed discussion of each individual. Connections to previously published research were made as well as to federal laws regarding the education of students with disabilities. The following chapter is an in-depth review of literature pertaining to the focus of this study.

Chapter Two

Literature Review

The ability to read texts fluently and comprehend grade level materials are essential skills needed to participate successfully in today's classrooms. Unfortunately, a large

number of urban adolescents enter middle school each year without these skills. This chapter includes a review of academic journal articles focusing on morphology and its role in reading intervention programs in the urban classroom. This chapter is divided into two sub-categories. The first subcategory includes articles addressing specific literacy needs in urban adolescents. The second subcategory will focus on articles that discuss the implementation of reading intervention programs with a strong morphology component.

The Literacy Needs of Urban Adolescents

Every child must have certain needs met before she/he can be expected to learn and thrive in an academic setting. Many of these needs teachers take for granted. Educators often assume that students come to school each day: well rested, fed, wearing clean clothes, prepared, and highly motivated to learn. Unfortunately, this is not always the case, especially in urban schools that serve students from lower socio-economic backgrounds. Teachers fill many roles and they often spend the majority of the school day helping meet students' daily physical needs; however, they must also focus on addressing students' academic needs. Researchers have identified some of these academic needs that influence the success of students. These needs include: student motivation, knowledge and understanding of spoken language skills, use of academic language, the implementation of direct instruction reading programs, and the creation of effective Tier 2 literacy instruction.

Unrau and Schlackman (2006) explored "the effects of intrinsic and extrinsic motivation on reading achievement for urban middle school students" (p. 81). Data were collected through the use of administering the *Motivation for Reading Questionnaire* (MRQ, Wigfield & Guthrie, 1997) and the *Gates-MacGinitie* test (MacGinitie, 1998). The authors

described intrinsic motivation as a "student's desire for mastery, spontaneous curiosity and inquiry" and extrinsic motivation as "participation in an activity, not for its own sake, but for rewards or the release from some external social demand" (p.81). The independent variables involved the intrinsic and extrinsic motivation of the sample students and the dependent variable was student reading achievement.

The sample involved students in 6th, 7th and 8th grades who all attended the same urban middle school in Los Angeles. The school's population was 75% Hispanic, 20% Asian, and 5% African American, American Indian or Caucasian. Ninety percent of participating students qualified for free or reduced lunch. Students who qualified as English language learners were not included in the sample group. For the purpose of this study, the authors chose to only analyze the data from the Hispanic and Asian student populations. As a result, the sample was made up of 1,032 students (768 Hispanic students, 264 Asian students).

This study was conducted over the course of 2 academic years. The *MRQ* was given to the sample group in the fall of the first and second years. The *MRQ* was composed of 11 components meant to measure reading motivation, these include: self-efficacy, challenge, work avoidance, curiosity, involvement, importance, recognition, grades, competition, social motives and compliance (Unrau & Schlackman, 2006). The *Gates-MacGinitie* test was given to the students in the fall of year two. This test measured vocabulary knowledge and reading comprehension skills of narrative and expository texts. Students were placed into cohorts based on grade level. The "6-7" cohort consisted of students who were in 6th grade during the first year of the study, and the "7-8" cohort consisted of students who were in the 7th grade during the first year of the study

Unrau and Schlackman (2006) found the following results: reading achievement in Hispanic students negatively correlated with the curiosity, grades and social components from the *MRQ.* In Asian students, reading achievement correlated positively with the involvement and challenge components. In both Asian and Hispanic females, the authors found a positive correlation with the involvement, recognition and social components. However, only Hispanic females showed a negative correlation with the competition component. The grade level of each student was also taken into account. Asian students were found to have a negative correlation with the involvement, recognition, grades, social, and compliance components when compared to their grade in school. This means, the higher the grade, the lower the scores tended to be in these components. Hispanic students had a negative correlation with all intrinsic and extrinsic motivation components. Overall, the authors found that intrinsic motivation had a significant effect on reading achievement in Asian students and for the Hispanic students in the sample, "intrinsic motivation had a smaller effect" (p.100). Extrinsic motivation was found to have a "negative impact on reading achievement" for both groups (p.100). The results of the MRQ also found that both Hispanic and Asian females were "more social and less competitive than their male counterparts" (p. 100).

Unrau and Schlackman (2006) investigated the effects of intrinsic and extrinsic motivation on reading achievement in Hispanic and Asian students in an urban school. This article introduced the idea that motivation plays a strong role in student achievement and provided examples of some of those motivating factors. The following article by Lesaux, Harris and Sloane (2012) will dig deeper into the idea that motivation can be influenced with the implementation of an appropriate vocabulary intervention program.

Lesaux, Harris and Sloane (2012) explored the effects of using a developmentally appropriate intervention program for 6th grade students. The purpose of this study was to determine if participation in this type of vocabulary intervention program had an effect on students' academic motivation. Data were collected through "researcher developed measures of academic vocabulary knowledge, morphological skills and reading comprehension of expository texts, including academic words" and standardized state tests (p. 235).

The study was conducted over the course of two academic school years, in a large urban school district. During the first year, seven middle schools participated, in the second year, fourteen middles schools participated. For both years, about 56% of participating students were deemed "struggling readers," and 58% of students qualified for free or reduced lunch.

> When designing the intervention program, Lesaux et al. included four main concepts for ….effective vocabulary instruction: 1) it is text based, so that academic words are studied in the authentic contexts in which they are used; 2) it emphasizes increasing students' depth of word knowledge; 3) it develops students' word-learning abilities, particularly through morphology instruction; and 4) it culminates in the opportunity to use the target words in an extended language production activity. (2012, p. 233)

The authors attempted to design an intervention program that would appeal to the interests of 6th grade students and be appropriate to their social maturity levels. This meant that the intervention program needed to include "collaborative learning activities,"

high interest articles that taught academic vocabulary, and "specific activities for building word knowledge incrementally" (p.233-234). As the program progressed, students were given more responsibility for their own learning. The authors collected data through the use of twenty focus groups (12 in year one, 8 in year two). These focus groups were made by teachers who selected 6-8 students with varying levels of academic achievement. Focus groups were led by group facilitators who used a series of interview questions to "gauge students' interest level in the overall intervention and their opinions about instructional activities" (p.235). The authors analyzed the transcripts from the focus group meetings and identified common responses made by students, these student driven comments were then categorized into three themes.

Lesaux et al. found three key concepts that provided some insight into the students' experience with the intervention program. These concepts included: "the reinforcing nature of vocabulary development," "the importance of a scaffolded learning environment," and "the importance of a sufficiently challenging learning environment" (p. 236-237). Many students stated that the writing portion of the intervention program was their favorite, because it gave them an opportunity to demonstrate what they had learned. Other students commented on how they began to encounter the newly learned vocabulary words outside of the classroom, and experienced an increase in self-confidence because they now understood these words. A lot of the students enjoyed the consistency of the program and developed their own routines. When first introduced to new activities in the program, some students struggled and became frustrated or felt overwhelmed. However, as these students became more familiar with the program, they began to view these activities as strategies that they could use in their day to day lives. Other students commented positively on the

opportunity to study a small amount of material thoroughly instead of briefly covering a larger number of topics. By the end of the program, the majority of the students reported that they felt they had a solid understanding of key academic vocabulary words and how to use those words in other contexts. Students also commented on the fact that they enjoyed being challenged to think about these new words in a different way. Lesaux et al. found that many students became frustrated and unmotivated when confronted with activities they deemed too challenging, but also lost interest and complained of boredom when given activities that were too easy. This article demonstrated that if students are continually made aware of their progress, have experiences being successful with newly learned material, and are adequately supported and challenged throughout the learning process their academic motivation will increase.

The first two studies (Lesaux, Harris & Phoebe, 2012) and (Unrau and Schlackman, 2006) show that motivation is a key factor to success in the classroom. However, as students move onto middle school and high school they will encounter a rapid increase in subject specific language, often referred to as academic language. This onslaught of new vocabulary words often proves challenging to even the most motivated students. One can only imagine the uphill battle awaiting students who are one or more grade levels behind in reading. The following study by Snow, Lawrence and White (2009) proposes a fairly straightforward solution; students need more exposure to academic language and opportunities to build strong vocabularies.

Snow, Lawrence and White (2009) conducted a study that explored the effects a limited vocabulary can have on over all reading comprehension. The primary purpose of

this study was to determine if students who participated in a vocabulary intervention program would have improved scores on a standardized state-mandated test. The secondary purpose was to determine who benefitted most from a vocabulary intervention program, non-native English speaking students or native English speaking students. The independent variable in this study was participation in a research-based vocabulary program called Word Generation. The dependent variable was improved scores on a standardized state assessment. Data were collected through the use of a multiple choice vocabulary test that contained the words learned in the program, and a review of student scores on the Massachusetts Comprehensive Assessment System: English Language Arts (Massachusetts Dept. of Elementary & Secondary Education, 1993) and the Group Reading and Diagnostic Evaluation (GRADE, Williams, 2000).

The sample for this study consisted of 697 6th, 7th and 8th grade students from five different schools in the Boston public school district. There were 349 girls and 348 boys. Out of the total sample, 287 students were considered non-native English speakers. All of the schools were characterized by a high percentage of students receiving free or reduced lunch (range between 79% and 91%). Three hundred nineteen students (162 girls, 157 boys) from 3 different Boston public schools were chosen to serve as the control group. One hundred fifty one students from the control group were classified as non-native English speakers.

The Word Generation intervention program took place over the course of 24 weeks. A typical week consisted of: Monday, students were introduced to an article that proposed "arguments on both sides of some difficult controversy or dilemma" that also contained

"five all-purpose academic words" in their English Language Arts (ELA) class (Snow, Lawrence & White, 2009, p. 2). These five words were then defined and the article was dissected with guided comprehension questions. On Tuesday, Wednesday and Thursday, students were exposed to these same five academic words with activities implemented in their math, social studies and science classes. Each activity took up to 15 minutes to complete and were used once a week per subject class. On Friday, students were required to write an essay explaining which side of the argument they supported.

Snow, Lawrence and White (2009) found that the students from the intervention group "learned more of the targeted words" than students in the control group and that non-native English speaking students "benefited more strongly" than students who only spoke English (p.314). They also found that "posttest scores on the Word Generation assessments strongly related to performance on the state accountability assessment" (p.341). This study highlights the need for intervention programs that focus on explicit vocabulary instruction of key academic words, as well as the importance of students being exposed to these words in other subjects such as math, science and social studies.

Having motivated students (Lesaux, Harris & Phoebe, 2012) with strong vocabularies (Snow, Lawrence & White, 2009) is a step in the right direction. The next step is being able to accurately express oneself verbally. The following article by Myers and Botting (2008) discusses the connection between spoken language skills and literacy, in relation to reading comprehension and decoding skills.

Myers and Botting (2008) studied the relationship between spoken language skills and reading comprehension among middle school students from economically

disadvantaged backgrounds. Spoken language skills, also known as the ability to express one's self verbally, are considered an essential part of the reading process, along with decoding and comprehension. The primary purpose of this study was to analyze the language and literacy skills of 11 year old students from an inner-city school district in the United Kingdom. The secondary purpose of this study was to figure out what percentage of participating students had low reading skills. Another goal of this study was to divide participants into two groups based on their decoding and comprehension performance. A final goal of this study was to determine if any of these struggling students were identified by their parents or schools as needing literacy interventions. The independent variable in this study was participation in standardized tests that measured spoken language and reading comprehension skills. The dependent variable was the determination and analysis of difficulties in reading comprehension and spoken language skills faced by participating students. Data were collected from three standardized tests used to measure both receptive and expressive spoken language skills. These test included: The British Picture Vocabulary Scales (Dunn, Dunn, Whetton & Burley, 1997), the Test for Reception of Grammar (Bishop, 2003) and the Expression, Reception and Recall of Narrative Instrument (Bishop, 2004). A parent interview was conducted and the sample group was compared to their non-participating peers by referencing scores on the school-based assessment the Cognitive Ability Tests-3 (NFER Nelson, 2001).

The study consisted of thirty-six, 11 and 12-year-olds, all from the same inner-city school in London. The sample consisted of 19 boys (53%) and 17 (47%) girls. Twenty-two (61%) of the sample students participated in the free school meals program. Thirty-two

(89%) of these students were English only speakers, the remaining 4 students had been speaking English for at least 6 years prior to the start of this study.

All participating students completed the required assessments in a quiet, individual setting over the course of two 1-hour sessions. The sessions were administered by certified speech and language therapists. Parents of the participating students were given the opportunity to meet with the researchers and discuss the results of each assessment and were given feedback specific to their child's learning needs. Students who scored one standard deviation or more below the average score for any of the assessments were considered to be having difficulties (Myers & Botting, 2008).

Student participants were divided into categories based on their scores from the given assessments. "Generally poor readers" were students who had difficulty with reading comprehension and decoding, "poor comprehenders" had trouble with reading comprehension but had decoding skills within the normal range. Finally, students who did not have trouble with reading comprehension or decoding were labeled "competent readers" (Myers & Botting, 2008). Twenty-eight percent of the sample group had trouble with decoding and fifty-eight percent struggled with reading comprehension. Myers and Botting noted that students who struggled with reading comprehension also had significantly poorer spoken language skills. They also found that students who had trouble with reading comprehension but did not struggle with decoding "were less likely to have been identified by the school as having any special education needs" (2008, p. 110). The study highlights the need for increased attention to the spoken language skills of middle school students and its connection to decoding and reading comprehension skills. More

research on this topic could lead to faster identification of learning difficulties in students and better interventions for those in need.

Myers and Botting (2008) concluded that students who struggled with reading comprehension and decoding were also more likely to have below average spoken language skills. What other specific areas need to be addressed? In many urban schools, it is not uncommon to find students who have made it to middle or even high school without basic literacy skills. Some of these skills include decoding, reading fluency, and reading comprehension. According to authors Shippen, Houchins, Steventon and Sartor (2005), this is where direct instruction reading groups play a role. Intensive, explicit instruction, delivered in small groups has been shown to have promising results for struggling readers.

The purpose of the study conducted by Shippen, Houchins, Steventon and Sartor (2005) was to measure the "differential" effects of two direct instruction reading programs on struggling middle school students. The researchers wanted to answer two specific questions with their research. 1) Do urban middle school students with poor reading skills demonstrate differential skill improvement in *word reading efficiency* based on the type of direct instruction reading program intervention? 2) Do urban middle school students with poor reading skills demonstrate differential skill improvement in *oral reading performance* (rate, accuracy, and fluency) based on the type of direct instruction reading program intervention? The independent variable in this study was the specific direct instruction program used and the dependent variable was the change in reading skills of participating students.

The sample consisted of fifty-five seventh grade students from the same school, who were two or more years behind in reading. Three of these students were identified as receiving special education services. The participating school was ninety-nine percent African American and ninety-seven percent of the student population qualified for free or reduced lunch. All fifty-five students were of African American descent. Twenty-two were female and thirty-three were male. They ranged in age from twelve to fourteen years old.

Participating students were given two pretests, the Test of Word Reading Efficiency (TOWRE, Torgenson, Wagner, & Rashotte, 1999) and the Gray Oral Reading Test (GORT-4, Wiederholt & Bryant, 2001). Students were placed in one of two direct instruction programs, the *Corrective Reading Decoding* or the *Reading Excellence: Word Attack and Rate Development Strategies (REWARDS)*. The *Corrective Reading Decoding* group was further spilt into groups; *B2* and *C*. Students placed in the *B2* group had lower basic reading skills compared to those in group *C*. Both programs were designed to help students struggling with "basic reading decoding skills." (Shippen et al., 2005, p. 177) The *Corrective Reading Decoding* program focused on "covert" (p.175) "word attack skills" along with "basic sound-symbol associations of individual letters, digraphs and blends." (2005, p.177) The *REWARDS* program focused on teaching a more "overt" (p.175) decoding strategy that taught students to "circle word parts at the beginning and ending of words, underline vowel sounds in the rest of the word, say the parts in the word, and say the whole word." (2005, p.178) Students participated in a total of "30 daily instructional sessions lasting approximately 55 minutes." (p.177) Students were then given the TOWRE and GORT again as posttests.

The researchers found that all of the students who participated in the study showed improvement in "word reading efficiency, reading rate, reading accuracy, and reading fluency regardless of the direct intervention program used." (Shippen et al., 2005, p.180) However, they also found that those students placed in the higher *Corrective Reading Decoding* group, C, made greater gains than those students in group *B2.* In fact, regardless of what direct instruction program they participated in, those students who started off as strong readers benefited the most from these interventions. Students also completed short surveys about the direct instruction program in which they participated. Those in group *C* were rated as being the most satisfied and the *B2* group was the least satisfied. The authors made a note about how a student's success in "effective reading interventions" could be linked to an increase in that student's motivation to read (2005, p. 180). This study further illustrates the "effectiveness of highly structured, explicit, teacher-directed instruction for struggling readers." (2005, p.180) The direct instruction programs used in this study could serve as templates for teachers and aid in the design of new reading intervention plans.

With all of the responsibilities educators in urban classrooms face each day it is hard to imagine making the time to implement intensive intervention with small groups of struggling students. Shippen, Houchins, Steventon and Sartor (2005) concluded in their study that it is possible and the results are well worth the work. However, the effort of implementing these groups must span beyond the confines of individual classrooms. It is not enough for one teacher to provide intensive literacy instruction, the whole department or staff, including administration, should have a role. In the next article, Graves, Brandon, Duesbery, McIntosh and Pyle (2011) explain why schools must be willing to adapt to the

ever changing and unique needs of its students, designing effective and targeted Tier 2 instruction is one way to best serve our students.

Graves, Brandon, Duesbery, McIntosh and Pyle (2011) conducted a quasi-experimental study to investigate the effects of a response-to-intervention (RTI) program in an urban middle school setting. The primary purpose of this study was to compare a Tier 2 research-based, intensive reading intervention program to the traditional 6th grade reading curriculum. The secondary purpose of this study was to "explore the development of a response-to-intervention model in middle school" (Graves, Brandon, Duesbery, McIntosh & Pyle, 2011, p.73). The independent variable involved participation in the reading intervention groups, and the dependent variable was improvement in reading comprehension.

The sample was made up of 60 of the "lowest performing" 6th grade students in a large urban middle school. Student performance was determined based upon the previous years' scores on the California Language Arts Standards Test. Thirty students were randomly selected to serve as the control group and thirty students were selected to make up the intervention group. The intervention group consisted of 16 boys and 14 girls. Seven students from the sample were identified as having learning disabilities, four of those students were in the control group and three of them were in the intervention group. During the 10 week study, a total of 9 students left the school, reducing the group numbers to: 24 students in the intervention group, and 27 students in the control group. None of the students identified as having learning disabilities left. One hundred percent of 6th grade students at this school qualified for free or reduces lunch, and 90% were English language

learners "at some point in their school history" (2011, p. 75). The school's diverse population was approximately 52% Hispanic, 24% African American, 21% Asian, and 3% Caucasian. All participating students were tested and deemed fluent in English at an intermediate level or higher.

Students in the intervention group were given pretests (curriculum-based measures that assessed oral reading fluency and Maze reading comprehension) and put into groups of 3. They received intensive, small group, reading instruction for 3 hours a week over the course of 10 weeks. The control group of students received the traditional curriculum in their ELA classes. Students in the intervention groups received explicit instruction in the following areas: decoding (phonemic awareness and phonics), fluency development, reading comprehension and vocabulary development (2011, p. 77). The *Corrective Reading* (Englemann, Meyer, Carnine, Becker, Eisele & Johnson, 1999) program or the *Reading Excellence: Word Attack and Rate Development Strategies* (REWARDS, Archer, Gleason, & Vachon, 2002) program was used to teach decoding. *Read Naturally* (Inhot, Matsoff, Gavin, & Hendrickson, 2001) was the program used to practice fluency. The *Daybook for Critical Reading and Writing* (Spandel, Nathan, & Robb, 2001) was used to build reading comprehension and vocabulary skills.

Both the intervention and control groups showed an increase in oral reading fluency skills on the posttest. The intervention group gained an average of 10.2 words per minute and the control group gained an average of 2.1 words per minute. Analysis of variance (ANOVA) showed that "growth in mean oral reading fluency scores within the intervention group was significant and depended on receiving the intervention" (Graves et al., 2011, p.

80). The pre and posttest scores for the Maze reading comprehension test also showed growth in both the intervention and control groups. This study provided an example of the potential effects of implementing effective Tier 1 and Tier 2 interventions for students with and without identified learning needs. The intervention model designed by Graves et al., could contribute to the development of future intervention programs. These programs could target specific populations, such as: struggling readers in middle and high school or students who have been referred for special education services.

This first subcategory has discussed some of the literacy needs found among urban adolescents. Unrau and Schlackman (2006) and Lesaux, Harris and Phoebe (2012) both expressed the importance of fostering student motivation through the use of progress monitoring and scaffolded learning opportunities. Allowing students to witness their own progress in turn leads to an increase in student motivation. In conjunction, providing a rigorous but supportive curriculum allows students to attain the skills necessary for success. Snow, Lawrence and White (2009) identified the need for an increased emphasis on academic vocabulary in order to better prepare students for middle and high school as well as state standardized assessments. These authors found that a common problem among urban adolescents was their limited vocabularies. Giving students access to high interest reading passages and writing prompts with targeted academic vocabulary words, along with opportunities to discuss their views with peers, proved to be very beneficial. Myers and Botting (2008) analyzed the connection between spoken language and reading comprehension skills. They found that most students with poor reading comprehension skills also struggled with spoken language skills, and fluent decoders who struggled with reading comprehension were less likely to be identified as needing special education

support. Shippen, Houchins, Steventon and Sartor (2005) analyzed the results of two different direct instruction reading programs among urban middle school students. They found that students from both direct instruction programs made significant progress. This led authors to conclude that the explicit and structured nature of both programs contributed to the study's overall success. Lastly, Graves, Brandon, Duesbery, McIntosh and Pyle (2011) explored the benefits of creating more effective Tier 2 literacy intervention programs. They found that students in the treatment groups made significant progress compared to those in the control groups. Ideally, these programs will be designed to encompass the needs addressed in this chapter while still being tailored to meet the individual needs of all struggling students.

Morphology

As it was discussed in the previous section, many urban adolescents enter middle and high school lacking basic literacy skills. They may struggle with decoding words, having a limited vocabulary or spoken language skills, reading fluently or comprehending unfamiliar or complex words. One way to address these issues is to provide students with a strong foundation in morphology. Morphology is the study of how words are formed. All words in the English language are made up of smaller units of meaning called morphemes. Morphemes can be manipulated to form prefixes, suffixes and root words. Prefixes and suffixes, also called affixes, can be added or subtracted to words to modify its original meaning. The ability to break words down into smaller parts or put parts together to form new words are skills struggling readers desperately need. The following journal articles

will discuss the importance of reading intervention programs that include a strong emphasis on morphology and overall vocabulary development.

Hurry et al. (2005) argued that increasing teachers' morphological knowledge and having them incorporate newly learned information into their classrooms would lead to an increase in student spelling gains. This authors' intent was to introduce research about morphology and the reading process and find a way to practically apply it in classroom settings. In this study, the independent variable was the teachers' knowledge of morphology and the dependent variable was the spelling gains made by the students of participating teachers.

Phase one consisted of 51 teachers and phase two consisted of 22 teachers and 3 literacy advisors from London State primary schools. They taught students ranging in age from 7 to 11 years old. The majority of those students tended to be from lower socioeconomic backgrounds, and diverse ethnic groups. A significant amount of these students spoke English as a second language.

This study was broken up into two phases. Phase one involved surveying and interviewing the participating teachers in order to assess their morphological awareness. They were also observed for one hour during their literacy period. The second phase involved inviting participating teachers to attend a "ten-session course focusing on morphology and comprehension" (Hurry et al., 2005). A control group of teachers from the same schools were used for comparison. Data were collected using two kinds of tests, a spelling test containing the targeted intervention material and a pseudo-word spelling test. For phase one of this study, teachers responded to interview questions meant to determine

their knowledge of how students learned to spell. They were given a list of spelling words that "illustrate a range of challenges for spellers" (Hurry et al.) and asked to explain what kind of problems their students would likely encounter when spelling these words and how they would teach students to correct these challenges. Teachers were also asked to explain what they thought were the "underlying reasons" for the spelling mistakes (Hurry et al.). In addition to the interviews, forty-six teachers were video-taped during one literacy hour. When reviewing these observations, the authors' paid close attention to the main learning objectives of each lesson and any accompanying activities.

For the second phase of this study, teachers completed ten "intervention" sessions over the course of one school year. These sessions introduced them to current theories and research on morphology, the importance of teacher involvement, and provided the necessary materials and instruction on how to deliver "explicit" morphology lessons to their students. During the first and last sessions, teachers were asked to describe what strategies they used to teach spelling and how to define a morpheme. These questions allowed the authors to "document the teachers' practice before intervention" and help generate discussions about spelling instruction strategies (Hurry et al.). The instructional activities that the teachers learned focused on how to break words down into root or base words and how adding prefixes and suffixes changed the meaning of words. Seventeen of the twenty-two teachers participating in the sessions gave two pre and two posttests to their students (the Morphology group) in order to assess their progress over the year. Similar pre and posttests were given to fifteen classes with teachers not participating in the sessions (the Control group). The first of these tests involved specially selected spelling words that contained morphemes learned during the intervention sessions. The second

tests involved spelling ten made-up words that also included the newly learned morphemes. In order to spell these invented words, students needed to apply the rules they learned in the intervention sessions. Throughout these intervention sessions, students often worked in groups and were expected to provide reasoning behind their answers. Teachers were instructed to spend time teaching the "grammatical function" of morphemes and reviewing verbs, nouns, and adjectives (Hurry et al.). Students were taught examples of derivational and inflectional morphemes, and how to pay attention to how a word's meaning or spelling changed based upon the morpheme added.

The authors found that after the teachers completed their ten sessions, "all but one of the teachers reported that the course had changed their approaches to teaching spelling" (Hurry et al., 2005). Several teachers stated that they would block out time during the week for explicit spelling instruction, others said that they now had more ideas for how to make more engaging and effective spelling lessons. The researchers also found that when given the opportunity for group discussion, many teachers developed novel spelling instruction strategies, such as spelling journals. The students of teachers who attended the sessions were found to also benefit from this intervention. The students of participating teachers made "larger gains" in spelling and pseudo-spelling than the students in the control groups. The authors concluded that teacher knowledge of morphology combined with explicit morphology lessons was "extremely effective."

Hurry et al. (2005) demonstrated the importance of bringing Morphology research into the classroom and making it accessible to students. The authors found that many of the participating teachers had a much better understanding of morphology and how to teach it

after the study. The students of participating teachers made greater gains in spelling compared to the control group. The next article by Kelley, Lesaux, Kieffer and Faller (2010) will discuss the effects of an explicit academic vocabulary program on struggling readers.

Kelley, Lesaux, Kieffer and Faller (2010) created a partnership with an urban school district in order to address the needs of struggling readers. The purpose of this study was to "determine if regular, systematic instruction in academic vocabulary in mainstream classrooms could be effective in boosting students' reading comprehension skills" (p. 6). The independent variable was participation in a specially designed vocabulary program, and the dependent variable was student achievement rates. The data collected included pre and post assessments, weekly teacher logs, and classroom observations. Progress made by participating students was compared to the progress made by students in a control group following the traditional curriculum.

The sample consisted of students from 7 different schools from the same urban school district. These schools had ethnically diverse populations that averaged between 67% and 96% students of color. Free or reduced lunch rates varied between schools as well, some as low as 58% and some as high as 100%. There were a total of 476 sixth graders, 346 of these students spoke English as a second language.

Kelley et al. (2010) designed an "18-week academic vocabulary program for sixth graders, featuring 8 two-week units and two review sessions" (p.6). Each unit involved eight days of lessons, delivered in 45-minute sessions, 4 days a week. Informational text articles from *Time for Kids* magazine were used in each unit. The criteria for each article selected included: "potential for student engagement, readability at the fourth to sixth

grade instructional level, length, and the specific vocabulary used" (p. 6). Eight or nine academic words were chosen from each article, these words were also found on the academic word list from Coxhead (2000). Each word was "used on three days between two and five times" (p.6) 11academic words were used in 2 different units, "which increased the number of exposures" (p.6) students had to these words.

The authors found that their 18 week long vocabulary program "resulted in greater gains on standardized and researcher-developed measures of vocabulary, word learning (e.g., morphological ability), and reading comprehension" (Kelley et al., 2010, p. 7). When compared to students in the control group, participating students scored dramatically higher on a curriculum based "multiple-choice test of academic words" (p.7). Native English speaking students and English language learners benefited equally from this vocabulary program. Kelley et al. made several recommendations to take into account when designing an effective vocabulary program. These recommendations include: using short and engaging text samples, focusing on "digging deep" into a few articles, allowing students time to practice newly learned academic vocabulary, teaching specific strategies to decipher unknown words, and having students incorporate newly learned words into their writing.

Kelley, Lesaux, Kieffer and Faller (2010) emphasized the connection between morphology skills and vocabulary instruction. Their research found that the control classrooms spent only approximately 10% of class time on vocabulary, the rest being spent on literature analysis. That 10% was spent primarily defining uncommon or complex words rather than teaching students specific strategies to use when encountering unknown

words in the future. The following article by Kieffer and Lesaux (2007) explores the relationship between morphology and reading comprehension skills and what that means for our struggling readers. These authors also provide specific strategies that can be implemented in the classroom.

Kieffer and Lesaux's article (2007) described the current state of reading research in relation to morphological awareness and reading comprehension. According to this article, it has been generally accepted by researchers that when students reach fourth grade there is an increased emphasis on content specific texts. This means that students must have a solid grasp of basic reading comprehension skills in order to begin to tackle the more complex "academic vocabulary" they will encounter in their other subjects such as math and science. Kieffer and Lesaux's previous research and background in teaching in urban schools "supports the importance of academic vocabulary in students' success and struggles" (2007). The purpose of this study was to evaluate students' vocabulary knowledge and compare it to their ability to break words down. They also investigated how this relationship evolved between fourth and fifth grade. Data was collected through the use of standardized tests that measured reading comprehension, word reading fluency, and vocabulary. Students were also asked to identify the root word in a more complicated word in order to complete a sentence; their answers were used to assess their understanding of morphology.

The study consisted of one hundred and eleven students. Eighty seven of the students were Spanish-speaking English language learners and twenty four of the students

were native English speakers. All of the students were 4th or 5th graders from an urban school district in southern California.

Students were given the Woodcock Language Proficiency Battery-Revised (Woodcock, 1991) to test reading comprehension along with the Gates-MacGinitie Reading Comprehension Test (MacGinitie, W.H., MacGinitie, R.K., Maria, & Dreyer, 2000). They were given the Test of Oral Word Reading Efficiency, Sight Word Efficiency subtest (TOWRE, Torgesen, Wagner & Rashotte, 1999) to assess word reading fluency and the Peabody Picture Vocabulary Test (PPVT-III, Dunn & Dunn, 1997) in order to test vocabulary knowledge. In addition to standardized tests, students were asked to identify the root words in more difficult words in order to complete sentences.

Kieffer and Lesaux found that "morphology was related to reading comprehension" in both grades and increased in importance as students aged. They also concluded that students with an increased knowledge of morphology had higher reading comprehension scores. This relationship was found to be the same for both groups (Spanish speakers and native English speakers). The authors suggest the use of four principles when teaching morphology to students:

1.) Teach Morphology in the Context of Rich, Explicit Vocabulary Instruction
2.) Teach Students to Use Morphology as a Cognitive Strategy With Explicit Steps
3.) Teach the Underlying Morphological Knowledge Needed in Two Ways-Both Explicitly and in Context
4.) For Students With Developed Knowledge of Spanish, Teach Morphology in Relation to Cognate Instruction

Kieffer and Lesaux (2007) concluded that teaching students how to use morphology to identify unknown words has the potential to improve reading comprehension skills. They also found that building morphology skills strengthens vocabulary skills. This final article by Harris (2007) provides an example of how a research based reading intervention program can be adapted to suit the needs of struggling adolescents in an urban setting. This program involved explicit instruction geared towards improving word identification skills.

Harris (2007) conducted a study that investigated the effects of implementing a literacy program called Words Their Way (WTW, Bear, Invernizzi, Templeton & Johnson, 2004). The purpose of this study was to determine if teaching struggling readers explicit word identification strategies would help improve their reading and writing skills. Data were collected through the use of the Qualitative Reading Inventory (QRI, Leslie & Caldwell, 2011), WTW spelling inventories, and student writing samples. The independent variable was participation in the WTW literacy program, while the dependent variable was the increase in spelling gains and length of student writing samples.

The sample consisted of 15 students from a 9th grade literacy class, at an urban high school with a high percentage of economically disadvantaged students. This class was "a regular education class composed of students receiving special education services, students with ESL needs, and students in regular education identified as at risk" (Harris, 2007, p. 5). Pretests determined that all participating students had reading levels that were between 3rd and 6th grade.

The QRI was given at the beginning of the program in order to determine the reading levels of each student. Students were then given spelling word inventories

provided by the WTW program. The inventories contained 40 words chosen to "represent different spelling patterns from the five stages of orthographic development" (Harris, p. 7). All students were given the Elementary Spelling Inventory. Four of the fifteen students scored high enough that they were given the Intermediate Spelling Inventory. The results of the spelling inventories helped "identify specific spelling patterns mastered and identified each student's stage of orthographic development" (Harris, p. 7). In addition, student writing samples were also used to arrange students into instructional groups. The WTW program provided lesson plans for teaching each spelling pattern and included activities such as word sorts and sound sorts. The word sort activities involved teaching students how to identify common spelling patterns and how to identify words that do not follow specific patterns. The sound sort activities required students to listen, rather than look, for spelling patterns. Students also participated in extension activities such as word hunts, which involved identifying spelling patterns in words they found in everyday texts such as newspapers and magazine articles. This sample group of students spent one semester, meeting every day for 86 minutes. The WTW program was taught during the first 20 minutes of every other class.

Student pretest scores on the spelling inventory had an average of 44.7 out of 78 points, or 57.3%. By the end of the WTW literacy program, the average of student spelling inventory scores increased to 58.6 out of 78 points, or 75%. This was a 13.9 point increase. Two out of the fifteen students earned 72 out of 78, or 92.3%. Harris (2007) also noted a positive increase in the students' "comfort level with writing" (p. 13). Students started to produce longer writing samples, and those students who were initially reluctant to try, began to write. Two important pieces of information can be gathered from this article and

used in future case studies. One, during the WTW lessons, students were expected to respond and think critically when identifying spelling patterns, teachers were warned not to give students the answers. Two, after establishing a daily routine with the WTW program, students were given a certain amount of independence in regards to pacing and thus took ownership of their learning.

Harris (2007) used the Words Their Way intervention program as a way to improve spelling and writing skills in struggling readers. While Harris (2007) discussed teaching specific word identification strategies as part of an intervention program, the next article by Rosenbaum (2001) describes her creation and use of a graphic organizer as a strategy to target vocabulary development.

Rosenbaum (2001) set out to create a vocabulary word map that satisfied the "criteria for effective vocabulary instruction" (p. 45), that was appropriate for middle school aged students. In her research, she found that the best techniques for teaching students vocabulary included: "synonyms, brief descriptions, examples and non-examples, rephrasing, repetition, associations and unique expression" (p. 45). These components were included in a word map and used with her students over the course of a school year. The independent variable in this study was student participation and use of the word map. The dependent variable was student attainment of "all three levels of word knowledge" which included: "association, comprehension and generation" (p. 48). Rosenbaum collected data through a review of the completed word maps and participation in vocabulary related classroom activities, including review games.

The participants in this study were 6th, 7th and 8th grade students. All of these students were identified as struggling readers and had a previous history of low standardized test scores.

In order to begin this study, Rosenbaum displayed a list of vocabulary words found in the first chapter of the novel her class was reading. She selected a word from the list and modeled how to complete the word map. This process included: writing the selected word and the page number it was found on in the middle word map bubble. Next, the "sentence from the book" (p. 45) where the word was located is written on the bubble below. This was meant to help students establish the context in which the word was found. After the context of the word was found, dictionaries were used to find the meaning of that word, in relation to the context of the sentence they found the word in. This meant that students were not expected to write down every definition for the word. They were then asked to record a synonym and an antonym or a non-example of the word. Next, students were asked to list "another" version of the word (ex. Escort and escorted), which meant they had to use their background knowledge of word structure and morphology. After this, some type of "unique expression, association, or example" was added to the map. The last step involved creating a new sentence "using the new word independently and appropriately" (p. 46).

In Rosenbaum's classroom, word mapping became part of the daily routine. Her students quickly became comfortable with the strategy. As the year progressed, she was able to make the students responsible for finding words in the readings to map, rather than providing them with a list of words. She found the results to be very positive, she stated

that her students "were taking an active role in their own vocabulary development, linking new words with prior knowledge, and applying the vocabulary in their own sentences" (p. 47). Rosenbaum also had her students take turns teaching their classmates words that they had completed in their word maps and she designed a review game with words provided to her by the students that proved to be very successful. Based upon her research, Rosenbaum was able to develop a word map graphic organizer that touched on all the important components of teaching vocabulary.

Rosenbaum (2001) examined the benefits of using a graphic organizer as a specific strategy to improve vocabulary skills in middle school students. This last article by Wanzek, Vaughn, Roberts and Fletcher (2001) further emphasizes the importance of providing well-rounded literacy intervention services to struggling students.

Wanzek, Vaughn, Roberts and Fletcher (2001) attempted to develop successful literacy interventions with students identified as having specific learning disabilities in reading. The primary focus of this study was to determine the effectiveness of providing "supplemental, remedial intervention" to students with learning disabilities when compared to other students with learning disabilities who did not receive intervention services. The independent variable in this study was participation in the intervention program. The dependent variable was student performance on word reading and comprehension assessments. Data were collected from the Texas Assessment of Knowledge and Skills (TAKS; Texas Education Agency, 2004) test that was taken by students prior to the start of this study. Students were also administered the Woodcock-Johnson III Tests of Achievement (WJ-III; Woodcock, McGrew, & Mather, 2001) before and immediately after

four months since the intervention. In addition, the Test of Word Reading Efficiency (TOWRE; Torgesen, Wagner, & Rashotte, 1999) was also given a total of three times. This study was conducted over the course of one school year.

This study consisted of sixty-five 6th, 7th and 8th grade students from seven different schools. The seven different schools were from three school districts in Texas. All of the schools were located in large urban cities. Approximately, 58% of the participating students were African American, 26% were Hispanic, 12% were Caucasian, the remaining 4% were not described in the article. Around sixty-eight percent of the students in the intervention group participated in the free or reduced-price lunch program. The control, or comparison group consisted of 55 students. Fifty-one percent were African American, 27% Hispanic and 20% Caucasian. Fifty-eight percent of the students from the control group qualified for free or reduced-price lunch.

Wanzek et al. noted that all participating students, in both the intervention and control groups received their "usual content-area instruction and special education instruction" throughout this study (p. 76). The students placed in the intervention group participated in "an additional reading intervention for one class period per day (45-50 min per day)" (p. 77). This intervention class replaced an elective class such as band or art. Class sizes were made up of 10 to 15 students. In order to lead these classes, fourteen intervention teachers were hired by the research team. They were given over 69 hours of training in order to properly deliver the intervention program. This included professional development trainings prior and during the study, biweekly staff meetings, and observations from the research team every few weeks.

This intervention program consisted of three phases. The first phase (Phase 1) focused on teaching word recognition and fluency over the course of 7 to 8 weeks. During this phase, the teachers used lessons from the REWARDS Intermediate (Archer, Gleason, & Vachon, 2005) program. Activities included: repeated oral readings with partners to build fluency, introduction to new vocabulary words, and identification and comprehension of newly learned words found within texts. Phase 2 targeted vocabulary and comprehension over the course of 17 to 18 weeks. Students continued to review strategies and activities learned in phase one, but with more emphasis on the "phonic elements and decoding strategies to reading and spelling of new vocabulary words" (p. 78). Students also reviewed word families and parts of speech. Two days a week students read novels and completed lessons designed by the research team, the other three days they participated in the REWARDS Plus Social Studies program (Archer, Gleason, & Vachon, 2005). Students were taught how to read and comprehend different types of text (ex. Informational and persuasive), practiced fluency and rate with repeated readings, and completing written response questions. The final phase (Phase 3) continued focusing on vocabulary and comprehension, but with more emphasis on "independent student application" (p. 78). This phase lasted approximately 8 to 10 weeks. Strategies from the previous two phases were reviewed, and students were encouraged to apply their newly learned skills to science and social studies texts as well as novels they read independently. This phase served as a synthesis of phase 1 and 2.

Wanzek et al. observed "moderate and statistically significant effects" on "sight word reading fluency" and "small effects on phonemic decoding fluency" for the students in the intervention group. No "significant difference" was found between the intervention

group and the control group when it came to "untimed measures of word reading, work attack, or passage comprehension." Students in the intervention group were tested four months later and "significantly outperformed the comparison group on sight word fluency," they also "maintained standard scores seen at posttest on all measures except phonemic decoding fluency" (p. 83) Despite these scores, the authors concluded that "overall gains were small to moderate and did not appreciably close the gap" between both groups (p. 84). They also stated that this study may support the idea that many intervention programs are "unlikely to adequately meet the needs of students with LD" (p. 84).

This second subcategory evaluated the effectiveness of implementing morphology based intervention programs in urban classrooms. Hurry et al. (2005) found that teachers responded positively to the opportunity to learn about morphology and how to implement newly learned instructional strategies in their own classrooms. The students of participating teachers subsequently showed improvement in spelling. Kelley, Lesaux, Kieffer and Faller (2010) determined that student participation in an intensive vocabulary intervention program led to higher scores on assessments in reading comprehension, morphological skills and vocabulary. Kieffer and Lesaux (2007) discussed the connection between morphology and reading comprehension skills and how that relationship becomes more important as students age. Harris (2007) evaluated the effectiveness of the Words Their Way reading program on struggling readers and its emphasis on word identification strategies. Rosenbaum (2001) designed a vocabulary based graphic organizer to be used as a strategy for struggling readers. Wanzek, Vaughn, Roberts and Fletcher (2001) finished this second section by emphasizing the need for more than just intervention programs as a way to close the achievement gap.

Conclusion

The focus of this chapter was organized into two parts. First, to introduce current research surrounding the literacy needs of urban adolescents. Second, to discuss the role morphology instruction plays in different reading intervention programs. In the first subsection, the importance of student motivation (Unrau and Schlackman, 2006) and (Lesaux, Harris & Phoebe, 2012), knowledge of academic language (Snow, Lawrence & White 2009) and spoken language skills (Myers & Botting, 2008) were highlighted. The necessity for intensive reading intervention groups (Shippen, Houchins, Steventon and Sartor, 2005) implemented effectively at the Tier 2 level (Graves, Brandon, Duesbery, McIntosh & Pyle, 2011) was also discussed. The second subsection provided an overview of reading intervention programs used in urban middle and high school settings. All of the reading programs contained a morphology or vocabulary component and each program led to a measurable amount of success. For example, increasing teacher knowledge of morphology led to gains in student spelling (Hurry et al., 2005). In another study, the development of an intensive, eighteen week, vocabulary program resulted in higher scores on standardized tests and specially designed vocabulary, reading comprehension and morphology assessments (Kelley, Lesaux, Kieffer & Faller, 2010). The final four studies also demonstrated high levels of student progress. In an ideal world, all students would come to school ready to learn and able to comprehend and complete grade level work. Unfortunately, urban schools tend to fall short of this ideal and spend the majority of their time and spare resources managing just the basic needs of their students. Educators must always be cognizant of the individual strengths and needs of all their students, the research

provided in this chapter is meant to set the foundation for the successful implementation of a morphology based intervention program.

Chapter Three

Procedures

The study was centered around explicit, small group instruction in morphology and its effect on vocabulary and reading comprehension skills in students with identified learning needs. Chapter Three will consist of three sections. The first section includes a summary of the school setting and overall demographics in which the intervention took place as well as individual descriptions of the participating students' academic backgrounds. The second section will outline the procedures and strategies used during this intervention program. Some strategies included: notecard manipulation, choral readings, and the use of graphic organizers. The final section will explain the data collection process that was used to determine this study's effectiveness, including pre and post test scores from the Upper Level Spelling Inventory assessments from the *Words Their Way* program (Flanigan, Hayes, Templeton, Bear, Invernizzi & Johnston, 2011) and teacher created formative and summative assessments.

Description of Sample

This section consists of five parts. The first part will describe the academic setting. The following four parts will provide a brief description of each student participant.

Setting. This research study took place in an urban elementary school in the Midwest. At the time of the study, enrollment at this school was approximately 463 students, grades kindergarten through eighth. The current student population was about 94.6% African American, 2.6% White, 1.9% Hispanic and 0.9% Asian/Pacific Islander. The percent of students with documented special education needs was 25.1, and 98.7% of the student population was considered economically disadvantaged (Wisconsin Department of Public Instruction, 2013-2014). The school's curriculum was fully aligned with the Common Core State Standards, as well as the district's Comprehensive Literacy Plan (CLP) and Comprehensive Mathematics and Science Plan (CMSP). Intervention sessions took place in a special education classroom during the school's allocated intervention block three times a week, for a total of six weeks. There was a total of fourteen sessions that lasted 30 minutes each, with the exception of four sessions being combined into two 60-minute sessions.

Student descriptions. Four middle school students were chosen to participate in this case study. All of these students received special education services in the area of literacy per a current documented Individualized Education Program (IEP). In addition, all participating students successfully completed level D in the reading replacement curriculum Language! in spring of 2014 (Voyager Sopris Learning, 2014). In order to protect the privacy of these students, their names have been changed to pseudonyms.

Student one: Ricky. At the time of the study Ricky was a twelve year old, African American, male student in the 7th grade. He was a high social, active, and athletic student. He initiates and maintains positive peer relationships easily, and loves to entertain and

make people laugh. He receives specialized support and instruction in the general and special education classrooms for a total of 120 minutes a day, 5 times a week. Ricky has been identified as a student with a specific learning disability. His individualized education program states that he has difficulty with decoding grade level academic and domain specific words as well as reading comprehension skills. I have worked with Ricky for the past two school years (2013-2014 and 2014-2015) including having him in my Language Book D class, and have noticed an increase in maturity. Ricky does have the tendency to joke and play fight in and out of the class room; however, there has been a notable decrease during the current school year. He struggles most in large, noisy, classroom settings and prefers to work in a small group or with the teacher one-on-one.

Student two: Elle. Elle was a thirteen year old, African American, female student in the 8th grade. She was a soft spoken and respectful young lady, who has a close group of friends that she has known for a long time. Elle tries very hard to keep up with the instruction in her general education classes and attends my afterschool tutoring sessions on a weekly basis. I worked closely with Elle when she was in seventh grade (2013-2014) and a student in my Language Book D class. Though I am not her assigned special education teacher this year, I check in with her on a daily basis. Elle was originally evaluated and identified as non-categorical, however, is currently in the process of being reevaluated for a Specific Learning Disability. In the past, non-categorical was a label our school district assigned to students identified as needing special education services but who did not meet criteria for a specific label. According to her most recent Individualized Education Program, Elle struggles with reading fluency as well as decoding uncommon or complex words. She was also focusing on increasing her reading comprehension skills by developing

strategies and using graphic organizers to determine the central theme of passages. Elle has no difficulty following classroom rules and expectations, though she was known to appear unfocused during class if she did not understand the material being presented. She was always easily redirected and worked very well in a small group.

Student three: Annie. Annie was a thirteen year old, African American, female student in the 7th grade. She was very respectful and helpful towards her teachers. I have worked with Annie for the past two school years and have had her as a student in my Language Book D class. Annie socializes fairly well with the same group of close knit friends, however, has experienced a fair amount of "drama" in the past few months. I have had to work with Annie and several of her friends on appropriate ways to deal with anger, rumors, and trust among friends. Despite this, Annie was a compliant student who was eager to please her teachers and wanted to do well in school. She attends my weekly tutoring sessions and has benefitted greatly from the extra practice. Annie has been identified as a student with a Specific Learned Disability. As stated in her Individualized Education Program, Annie was working on increasing her knowledge of prefixes, suffixes and base words in order to more fluently decode and define complex or unknown words. Annie loved to work one-on-one or in a small group with her teachers.

Student four: Devon. Devon was a twelve year old, African American, male student in the 7th grade. He was an extremely social and energetic young man who loved to dance and sing for others. He especially enjoyed helping his teachers and being assigned special classroom jobs. Devon works very well with younger students and was encouraged to be a positive role model for others. I have worked with Devon extensively for the past two years

in both my Language Book D class and in other subject areas. He was identified as a student with Other Health Impairment needs. In his current Individualized Education Program, Devon was focusing on using graphic organizers and repeated small passage readings in order to increase his reading fluency and comprehension skills. He was also working on learning common prefixes, suffixes and base words in order to improve his word decoding skills. Unfortunately, Devon has participated in a lot of the aforementioned "drama" with Annie and his other friends; this has had a negative impact on his academics and behaviors in class. Devon had a very hard time staying seated and keeping his hands to himself, naturally, this caused him to get in trouble and fall further behind in his classes. Devon works best in a quiet, small group setting, with teacher support.

The next section describes the daily and weekly procedures followed during this intervention program.

Description of Procedures

This section will include a summary of the procedures followed throughout this case study. As a group, my four participating students met with me three times a week, for six weeks, during our allocated 30-minute intervention block. There were a few occasions where students were absent and had make-up sessions with me in a one-on-one setting. Similarly, due to unforeseen circumstances, four of the 30-minute sessions were combined into two 60-minute sessions. Aside from this, my intervention group went smoothly and my students seemed to enjoy our weekly sessions (A copy of the weekly schedule is included in Appendix A).

The very first and last days of this case study involved having my students complete two pre-tests (first meeting) and the same two tests as post-tests (last meeting). These tests will be described more thoroughly in the next section of this chapter. The intervention program was spilt up into six parts. Each part consisted of 2-3 prefixes and 2-3 suffixes. Each week, students worked on the pre-selected prefixes and suffixes with me in a small group (A complete list of the pre-selected prefixes and suffixes are included below and in Appendix B).

Prefix/Suffix Wordlist

Week	Prefixes	Suffixes
1	Over-, Pre-	-ed, -ing
2	Re-, mis-	-ly, -y
3	Un-, dis-	-er, -est
4	in-, im-	-er, -or
5	il-, ir-	-ion, -tion, -ness
6	En-, em-	-s, -es

The first day of each week (Monday) was spent introducing and defining the week's prefixes and suffixes. The students would have a brief discussion (2-3 minutes) about whether or not they had ever heard of or seen these words before. Next, they manipulated pre-made notecards that allowed them to create new words with their weekly prefixes and suffixes. While making new words, students were challenged to define the words out loud based on the newly learned definitions as well as record them in a teacher made graphic organizer (A sample of this graphic organizer is included in Appendix C). The last step on the first day, involved students completing different worksheets related to the selected prefixes and suffixes together as a group. Answers were discussed and students were

encouraged to ask questions and challenge each other's choices. All worksheets came from the Vocabulary Through Morphemes program (Ebbers, 2004).

The second day of each week (Wednesday) began with a review of the weekly prefixes and suffixes. Students were asked to list and define words they remembered from the previous session and allowed to consult their graphic organizers. Next, students were given time to finish making words with their notecards or to complete any unfinished worksheets from the Vocabulary Through Morphemes book (Ebbers, 2004). The majority of this session was then spent on choral and individual readings of passages that included our weekly prefixes and suffixes. All reading passages were found on the Free-Reading.net (Wireless Generation, 2009) website (A list of all reading passages is included in Appendix D). Students were given a copy of each reading passage. They were given a few minutes to first read the passage silently and highlight words that contained the weekly prefixes or suffixes. Each student was then given the opportunity to read one of the passages aloud to the group, in order to practice their reading fluency. The remaining students were asked to follow along and put their thumbs up when they heard a word containing one of the selected prefixes or suffixes read aloud. Based upon the availability of reading passages, students were occasionally asked to read aloud the same passage. The remaining part of the session was spent discussing and defining the words identified in the passages. In three out of the six weeks, students also completed an exit slip on the second day.

The third day was spent reviewing the weekly prefixes and suffixes. Students were usually asked to list from memory as many newly learned words as they could. If asked to define the words, students were allowed to use their graphic organizers as reference. Next,

students were given time to finish any incomplete work from the previous two days. During this time, students could also request opportunities to reread the passages aloud for the group as extra fluency practice. Students then completed a short, five question exit slip in order to assess what they learned and retained from the week's sessions.

This final section will discuss the formal and informal assessments given throughout this six week intervention program and what kind of data was collected.

Data Collection and Assessments Given

Throughout the six week long case study, data were collected in order to track the progress of my students and highlight any need for adjustments to future sessions. Anecdotal data were taken for each session and can be found in Appendix F. As pre-tests, students were given the Upper Level Spelling Inventory assessments from the *Words Their Way* program (Flanigan, Hayes, Templeton, Bear, Invernizzi & Johnston, 2011) and a teacher created spelling test (see Appendix G). At the end of this intervention program, students were given these same two assessments in order to gather post-test data. All four students demonstrated an increase in score from the pre-tests to the post-tests; however, a more detailed summary of individual student results will be discussed in a later chapter. With regards to formative assessments, students completed practice sheets taken from the Vocabulary Through Morphemes program (Ebbers, 2004) and teacher created exit slips. I reviewed the practice sheets and exit slips after each session in order to gauge my students' understanding of the weekly prefixes and suffixes. In addition, I used the choral and individual readings as an informal way to assess student engagement and fluency levels.

Conclusion

This chapter served to provide an in-depth look at the student participants, the procedures implemented and the data collection methods followed throughout this case study. Each student was introduced and their strengths and academic goals highlighted. The procedures detailed included: the use of notecards to build words with target prefixes and suffixes, choral and individual reading passages, and direct instruction in how to use and reference graphic organizers. Lastly, the collection of data was discussed. This included the use of formal and informal assessments given before, during, and after the intervention program.

The following chapter, Chapter Four: Results, will describe each individual students' areas of growth and how these results were found. Student data will be displayed in table form, in order to better visualize where gains were made and what areas are in need of improvement. The intent of this chapter is not to compare student scores to each other; rather, it serves as a way to better meet the individual academic needs of each of these students.

Chapter Four

Results

The purpose of this case study was to determine if direct, intensive practice in specific skills on morphology could have a positive effect on vocabulary skills. This chapter will discuss and analyze the data collected throughout this intervention program; it is broken up into four sections, one for each participating student. The intent of this chapter is not to compare students to each other, but rather to identify the areas of growth each student experienced individually as well as the areas in need of improvement. Within each section, data from pretests 1 and 2 and posttests 1 and 2, as well as scores from informal, formative exit slips, will be displayed and discussed. Pretest and posttest 1 came from the Words Their Way Upper Level Spelling Inventory assessments (Flanigan, Hayes, Templeton, Bear, Invernizzi & Johnston, 2011). The second pretest and posttest was a teacher generated spelling test containing words with all of the prefixes and suffixes introduced during the case study (a full list of these spelling words can be found in Appendix G). Individual scores from the weekly exit slips completed by participating students are also included in this chapter.

Individual Student Results

The following part is divided into four separate sections. Each student's progress and scores will be displayed and discussed. Data was collected through the use of two different spelling lists. One list was provided by the the Words There Way Upper Level Spelling Inventory assessments (Flanigan, Hayes, Templeton, Bear, Invernizzi & Johnston, 2011) and the second list was made by the teacher. The first pre and posttests involved a

list of 25 words that were graded based on six word patterns that are found among each spelling stage (early, middle, late). These categories included: Blends and Digraphs (abbreviated B/D), Vowels (A), Complex Consonants (CC), Inflected Endings and Syllable Juncture (IE/SJ), Unaccented Final Syllables (UFS) and Affixes (A). Participants received a score for each of the 6 categories, and the percentages arranged in a figure. In addition, students received two grades for the second test (pre and posttests 2), the first grade represents how many words they spelled entirely correct. The second score represents how many words they had where they spelled the affix (prefix or suffix) correctly, but did not spell the whole word correctly. In addition, all four students completed brief, weekly exit slips as an informal way of assessing what they remembered from that week's intervention sessions. The scores for each student are provided below.

Student one: Ricky. On the pretest from the WTW Upper Level Spelling Inventory, Ricky scored a 40% (2/5) in blends and digraphs, 33% (3/9) in vowels, 14% (1/7) in complex consonants, 16% (1/6) in inflected endings and syllable juncture, 25% (1/4) in unaccented final syllables and 100% (1/1) in affixes. It should be noted that the spelling list only contained a single affix. On the posttest from the WTW Upper Level Spelling Inventory, Ricky scored a 20% (1/5) in blends and digraphs, 66% (6/9) in vowels, 1/7 (14%) in complex consonants, 33% (2/6) in inflected endings and syllable juncture, 25% (1/4) in unaccented final syllables and 100% (1/1) in affixes (See Figure 1 and Table 1). Ricky's biggest increase in score was in the vowels category. He also increased his score in the inflected endings and syllable junction section. His scores remained the same in the complex consonants, unaccented final syllables and affixes categories. The only decrease in score was seen in the blends and digraphs section.

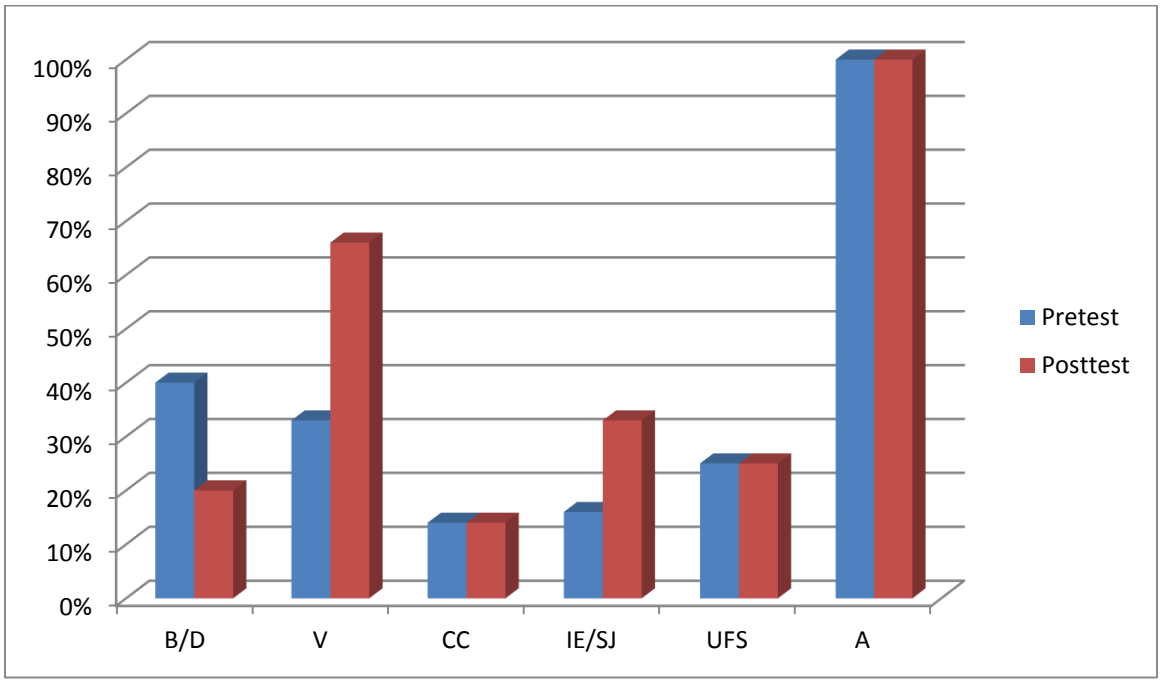

Figure 1. Ricky's pretest and posttest scores from the WTW upper level spelling inventory organized by category.

Table 1

Ricky's pretest and posttest scores from the WTW upper level spelling inventory organized by category.

	B/D	V	CC	IE/SJ	UFS	A
Pretest	2/5= 40%	3/9 = 33%	1/7 = 14%	1/6 = 16%	1/4 = 25%	1/1=100%
Posttest	1/5 = 20%	6/9 = 66%	1/7 = 14%	2/6 = 33%	1/4 = 25%	1/1=100%

On the teacher generated spelling test, measuring whole words spelled correctly, pretest, Ricky spelled 9 out of 25 words correctly. On the posttest for whole words spelled correctly, he spelled13 out of the same 25 words correctly (see Figure 2). On the same teacher generated spelling test measuring the number of words with affixes spelled correctly, pretest, Ricky spelled 14 of the affixes found in the 25 spelling words correctly.

On the posttest for affixes spelled correctly, he spelled 22 of the affixes correctly (see Figure 3).

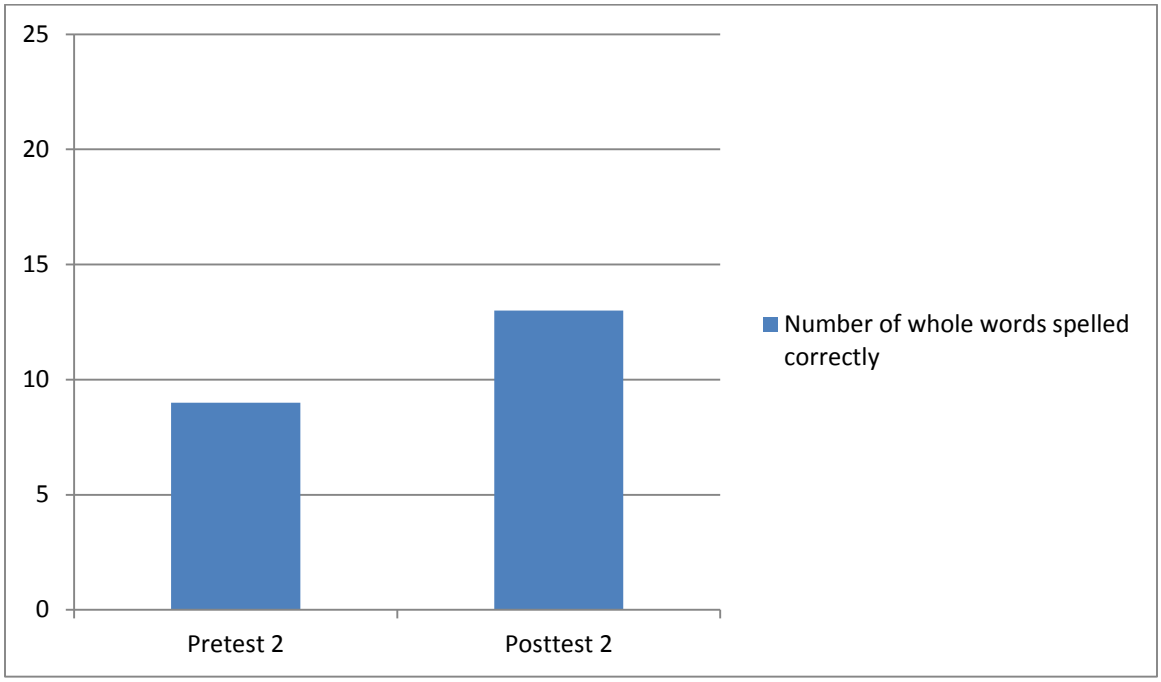

Figure 2. Ricky's pretest and posttest scores from the teacher made spelling test.

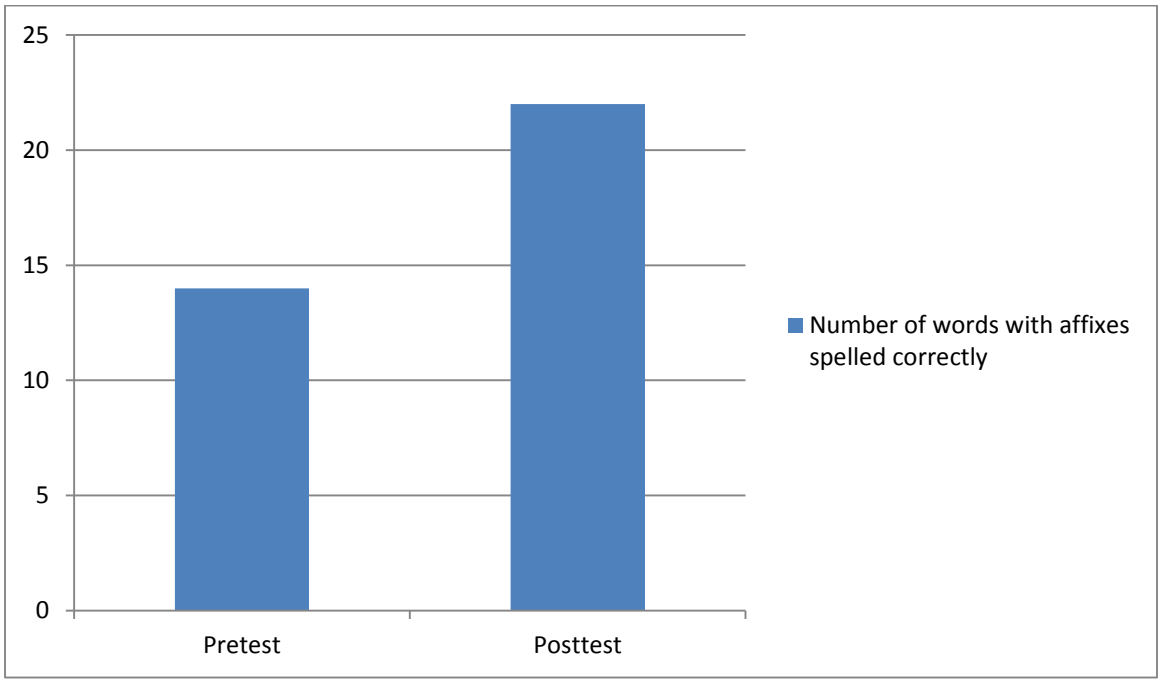

Figure 3. Ricky's pretest and posttest scores from the teacher made spelling test, only counting correctly spelled affixes.

On the weekly exit slips, Ricky's scores started out strong at 100% during the first week, remained constant for weeks two, three and four, then steadily decreased in weeks five and six (See Table 2 and Figure 4). During week two, Ricky correctly defined the affixes re-, mis-, and –ly. He incorrectly identified the meaning of the suffix –y. In week three, he knew the meaning of un- and –er, correctly defined the words unkind and dissatisfied as well as used the suffixes –er and –est correctly in a sentence. Ricky incorrectly selected the meaning for dis- and –est. During week 4, he correctly defined the words inhuman, impossible, incapable and impatient, while also identifying the correct spelling of the words baker and server. However, he confused the –or in the words "sailor" and "actor" for –er. In week five, Ricky defined the words illegal and irresponsible, but he incorrectly identified the definition of –ion/-tion and –ness. Lastly, during week 6 he was able to define the

prefix en- but incorrectly identified the definition for the prefix –em, and confused the tenses for the suffixes –s and –es.

Table 2

Ricky's weekly exit slip scores and affixes not yet mastered.

Week/Affixes	1 Over-/ pre- & -ed/-ing		2 re-/mis- & -ly/-y		3 un-/dis- & -er/-est		4 in-/im- & -er/-or		5 il-/ir- & -ion/-tion /-ness		6 en-/em- & -s/-es	
Score	4/4	100%	3/4	75%	6/8	75%	6/8	75%	2/4	50%	1/4	25%
Affixes not yet mastered			-y		Dis-, -est		-or		-ion, -tion, -ness		Em-, -s, -es	

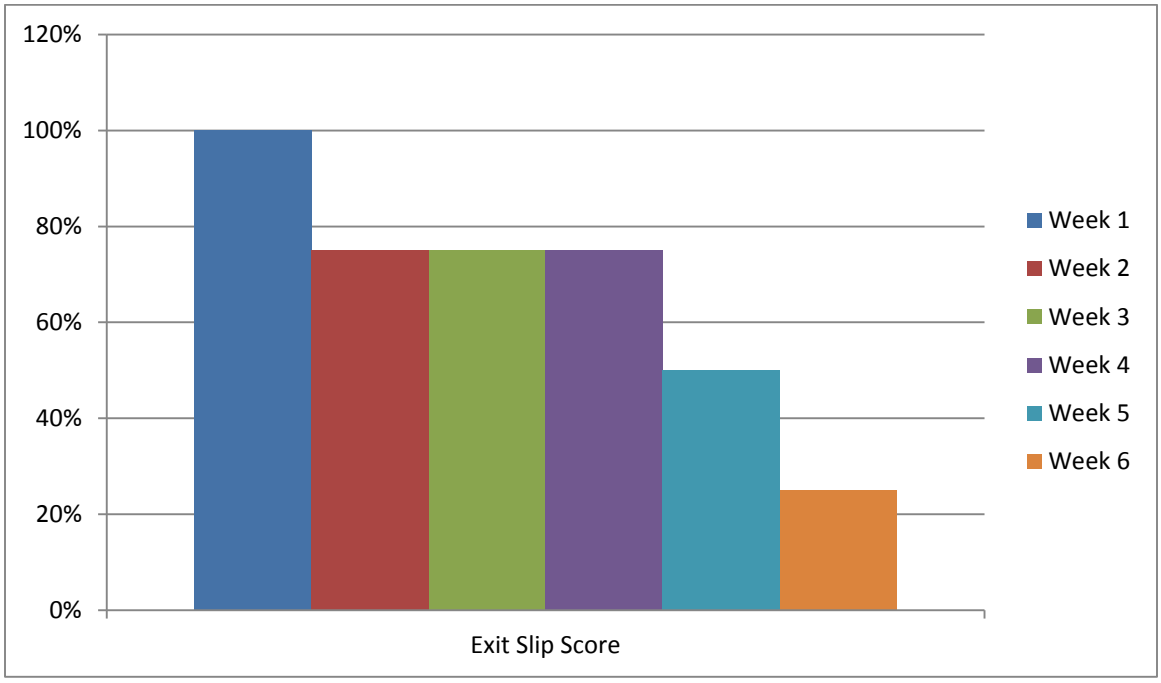

Figure 4. Ricky's weekly exit slip scores.

Student two: Elle. On the pretest from the WTW Upper Level Spelling Inventory, Elle scored a 40% (2/5) in blends and digraphs, 55% (5/9) in vowels, 0% (0/7) in complex consonants, 16% (1/6) in inflected endings and syllable juncture, 25% (1/4) in unaccented

final syllables, and 100% (1/1) in affixes. On the posttest from the WTW Upper Level Spelling Inventory, Elle scored a 40% (2/5) in blends and digraphs, 55% (5/9) in vowels, 0% (0/7) in complex consonants, 33% (2/6) in inflected endings and syllable juncture, 25% (1/4) in unaccented final syllables, and 100% (1/1) in affixes. Elle made an increase in the inflected endings and syllable juncture category. Her scores stayed the same in the blends and digraphs, vowels, complex consonants, unaccented final syllables, and affixes (See Figure 5 and Table 3).

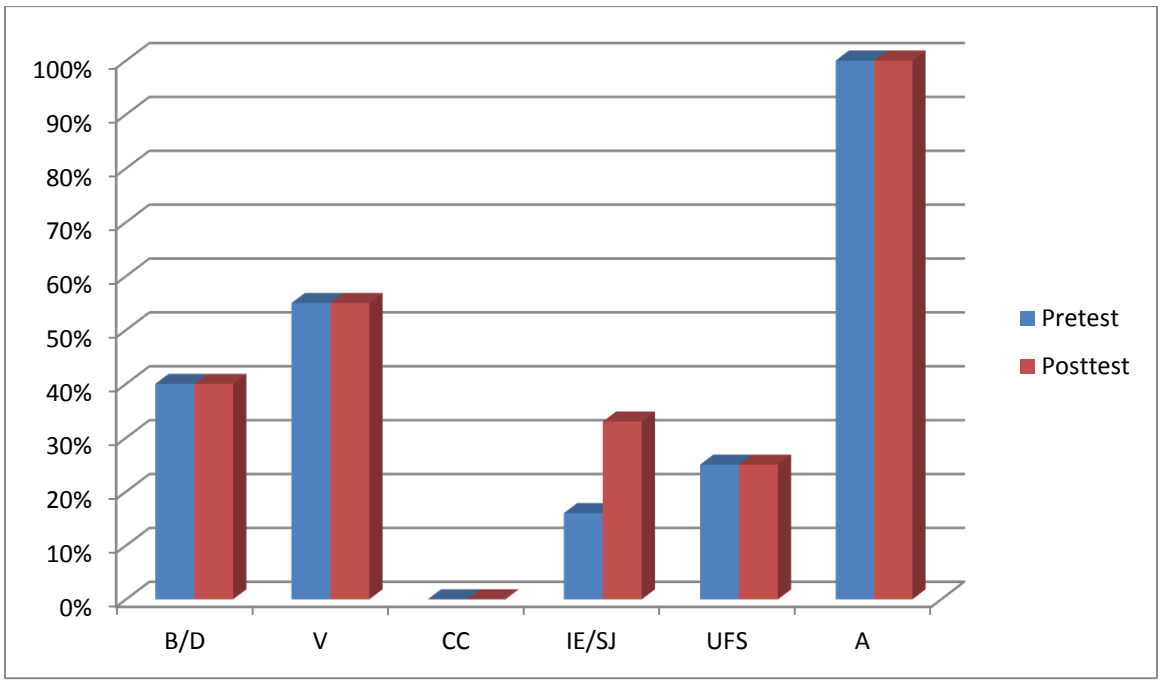

Figure 5. Elle's pretest and posttest scores from the WTW upper level spelling inventory organized by category.

Table 3

Elle's pretest and posttest scores from the WTW upper level spelling inventory organized by category

	B/D	V	CC	IE/SJ	UFS	A
Pretest	2/5 = 40%	5/9 = 55%	0/7 = 0%	1/6 = 16%	1/4 = 25%	1/1=100%
Posttest	2/5 = 40%	5/9 = 55%	0/7 = 0%	2/6 = 33%	1/4 = 25%	1/1=100%

On the teacher generated spelling test, measuring whole words spelled correctly, pretest, Elle spelled 10 out of 25 words correctly. On the posttest for whole words spelled correctly, she spelled15 out of the same 25 words correctly (see Figure 6). On the same teacher generated spelling test measuring the number of words with affixes spelled correctly, pretest, Elle spelled 14 of the affixes found in the 25 spelling words correctly. On the posttest for affixes spelled correctly, she spelled 21 of the affixes correctly (see Figure 7).

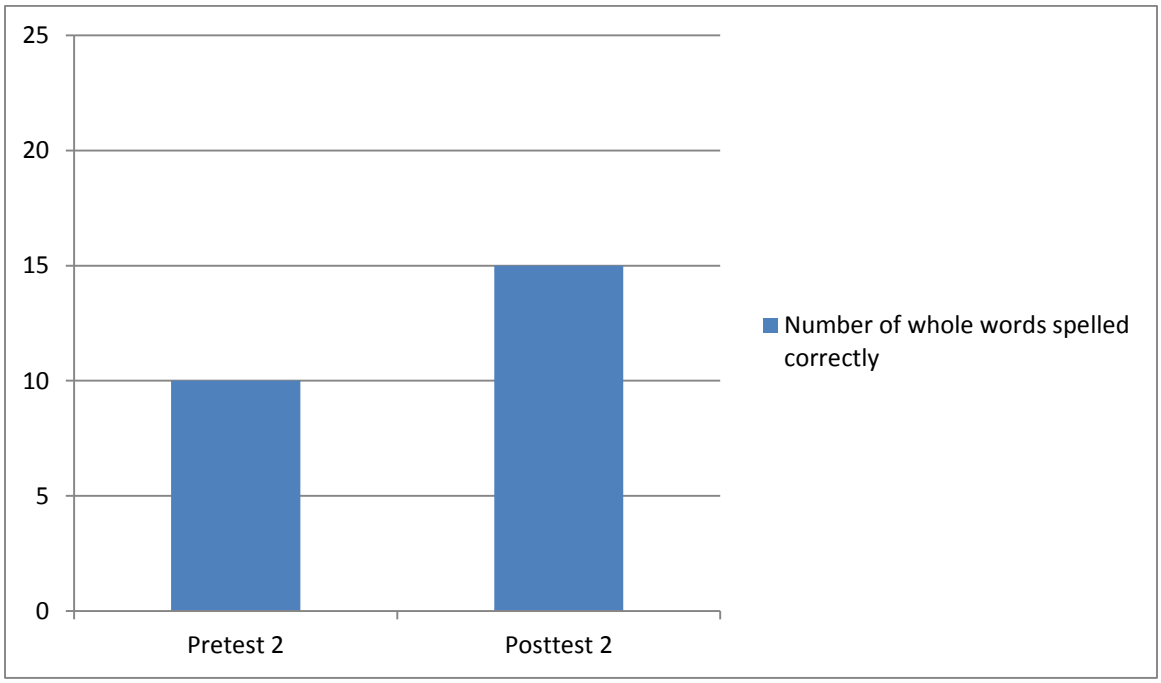

Figure 6. Elle's pretest and posttest scores from the teacher made spelling test.

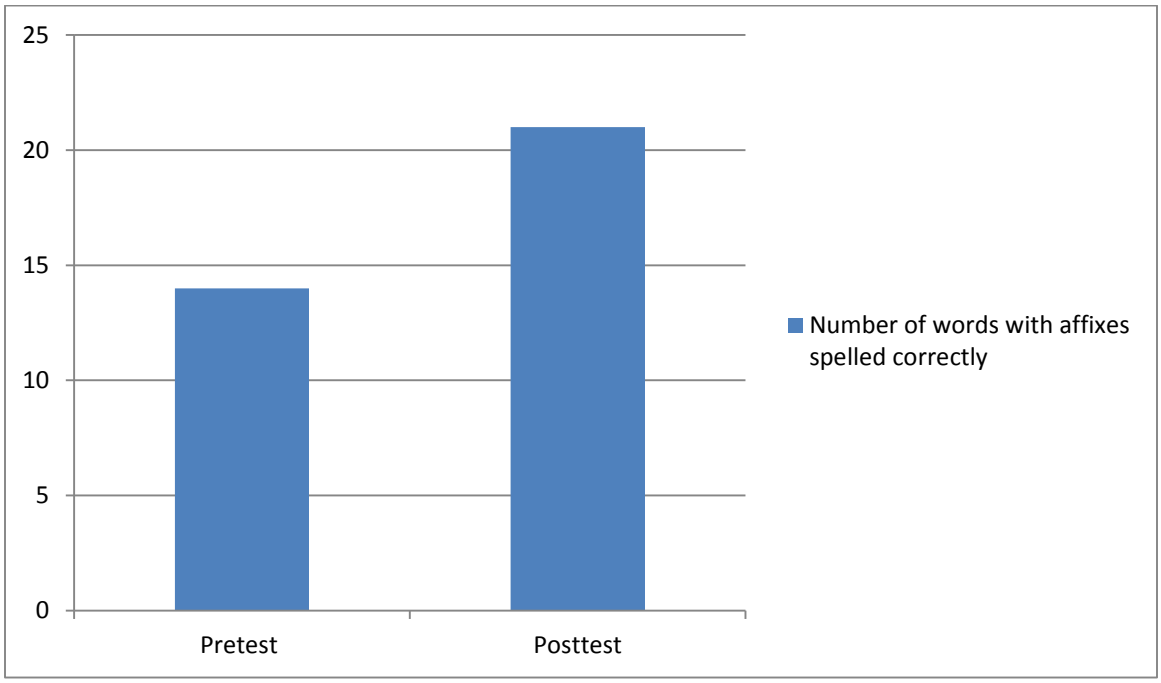

Figure 7. Elle's pretest and posttest scores from the teacher made spelling test, only counting correctly spelled affixes.

Elle's scores for week one, three and four were at 100%. Her score for week two decreased slightly to 75%, she chose the correct definitions for the affixes mis-, -ly, and –y but incorrectly defined the prefix re-. Her week five score dropped to 50% because she did not correctly define the suffixes –ion/-tion and –ness, despite having correctly identified the meaning of the words illegal and irresponsible. Unfortunately, her score then decreased to 0% in week 6. She remembered that the prefixes en- and em- have the same meaning, however selected the same wrong meaning for both answers. Elle also confused the word tense when –s or –es is added to a word (See Table 4 and Figure 8).

Table 4

Elle's weekly exit slip scores and affixes not yet mastered.

Week/Affixes	1 Over-/ pre- & -ed/-ing		2 re-/mis- & -ly/-y		3 un-/dis- & -er/-est		4 in-/im- & -er/-or		5 il-/ir- & -ion/-tion /-ness		6 en-/em- & -s/-es	
Score	4/4	100%	3/4	75%	8/8	100%	8/8	100%	2/4	50%	0/4	0%
Affixes not yet mastered			Re-						-ion, -tion, -ness		En-, em-, -s, -es	

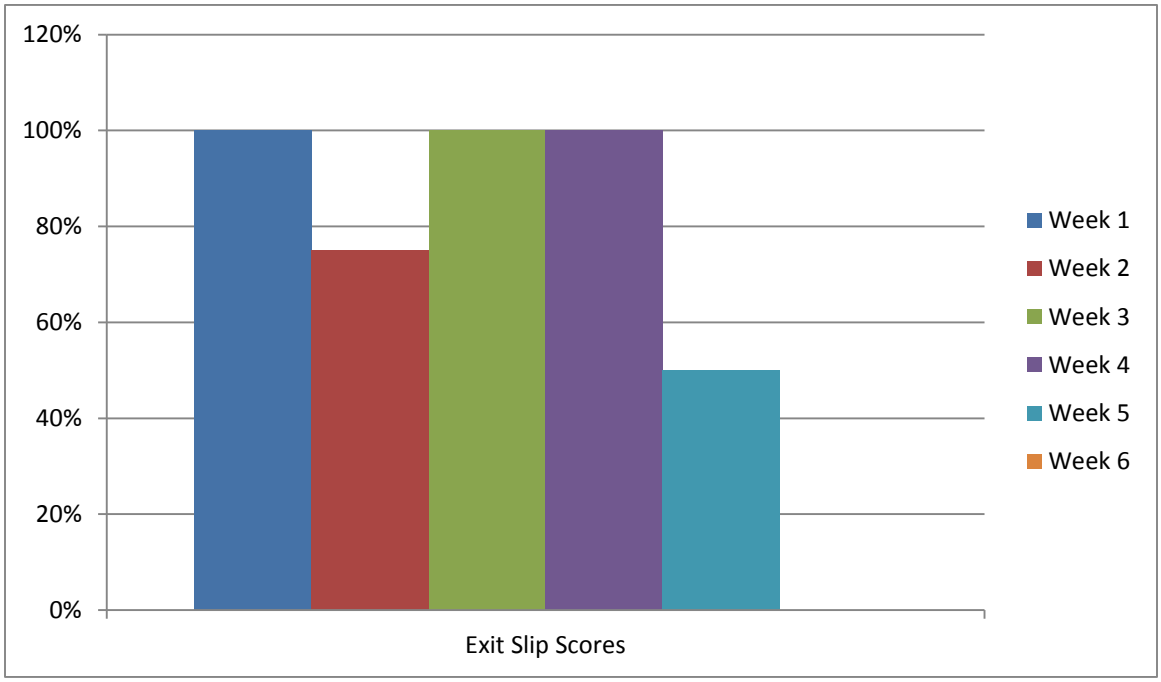

Figure 8. Elle's weekly exit slip scores.

Student three: Annie On the pretest from the WTW Upper Level Spelling Inventory, Annie scored a 40% (2/5) in blends and digraphs, 55% (5/9) in vowels, 0% (0/7) in complex consonants, 16% (1/6) in inflected endings and syllable juncture, 75% (3/4) in unaccented final syllables, and 100% (1/1) in affixes. On the posttest from the WTW Upper Level Spelling Inventory, Annie scored a 40% (2/5) in blends and digraphs, 44% (4/9) in

vowels, 28% (2/7) in complex consonants, 16% (1/6) in inflected endings and syllable juncture, 75% (3/4) in unaccented final syllables, and 100% (1/1) in affixes (See Figure 9 and Table 5). Annie increased the most in the complex consonant category. Her scores remained constant in blends and digraphs, inflected endings and syllable juncture, unaccented final syllables, and affixes categories. Her score decreased in the vowels category.

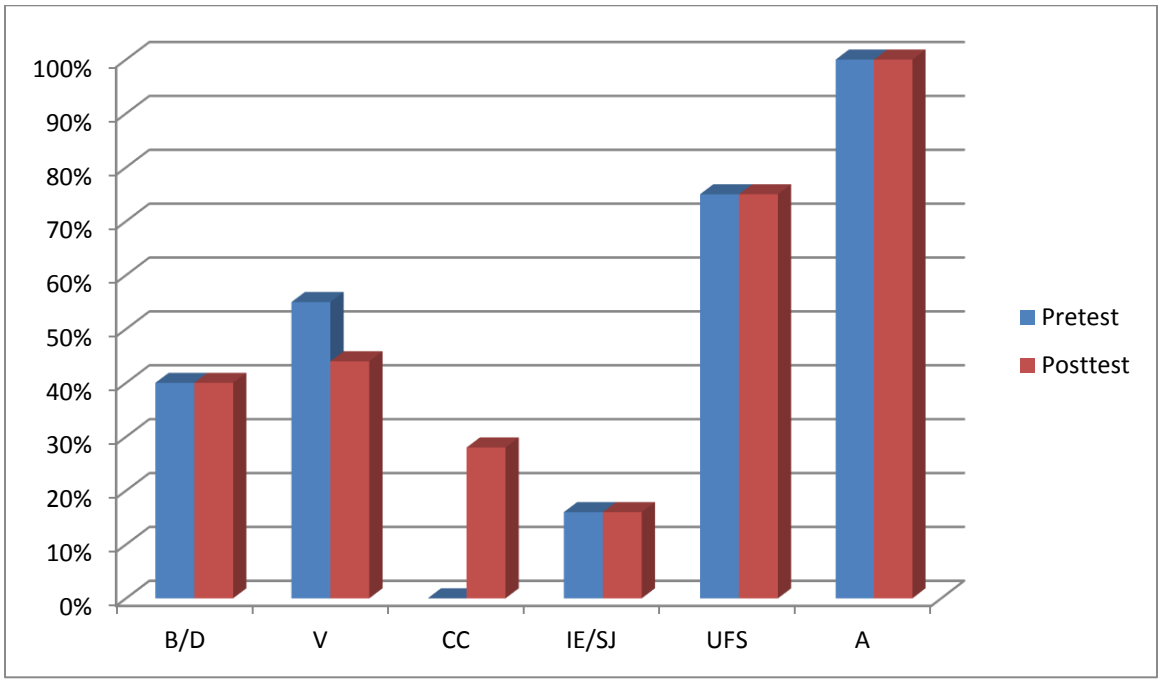

Figure 9. Annie's pretest and posttest scores from the WTW upper level spelling inventory organized by category.

Table 5

Annie's pretest and posttest scores from the WTW upper level spelling inventory organized by category.

	B/D	V	CC	IE/SJ	UFS	A
Pretest	2/5 = 40%	5/9 = 55%	0/7 = 0%	1/6 = 16%	3/4 = 75%	1/1=100%
Posttest	2/5 = 40%	4/9 = 44%	2/7 = 28%	1/6 = 16%	3/4 = 75%	1/1=100%

On the teacher generated spelling test, measuring whole words spelled correctly, pretest, Annie spelled 11 out of 25 words correctly. On the posttest for whole words spelled correctly, she spelled13 out of the same 25 words correctly (see Figure 10). On the same teacher generated spelling test measuring the number of words with affixes spelled correctly, pretest, Annie spelled 18 of the affixes found in the 25 spelling words correctly. On the posttest for affixes spelled correctly, she spelled 19 of the affixes correctly (see Figure 11).

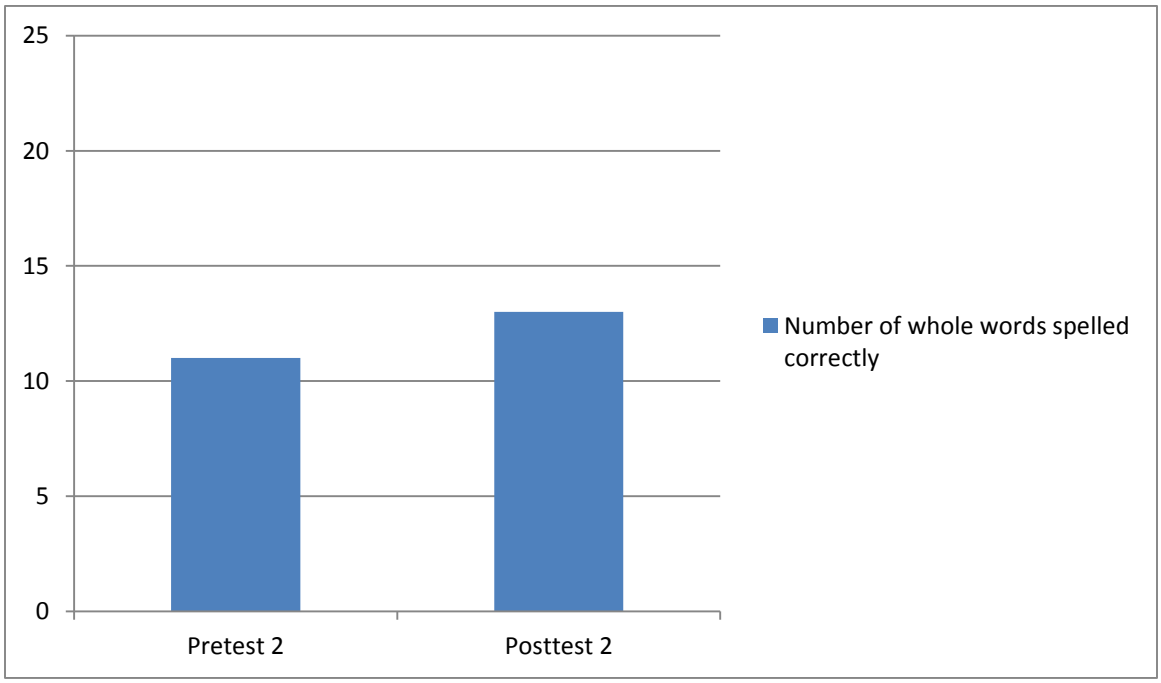

Figure 10. Annie's pretest and posttest scores from the teacher made spelling test.

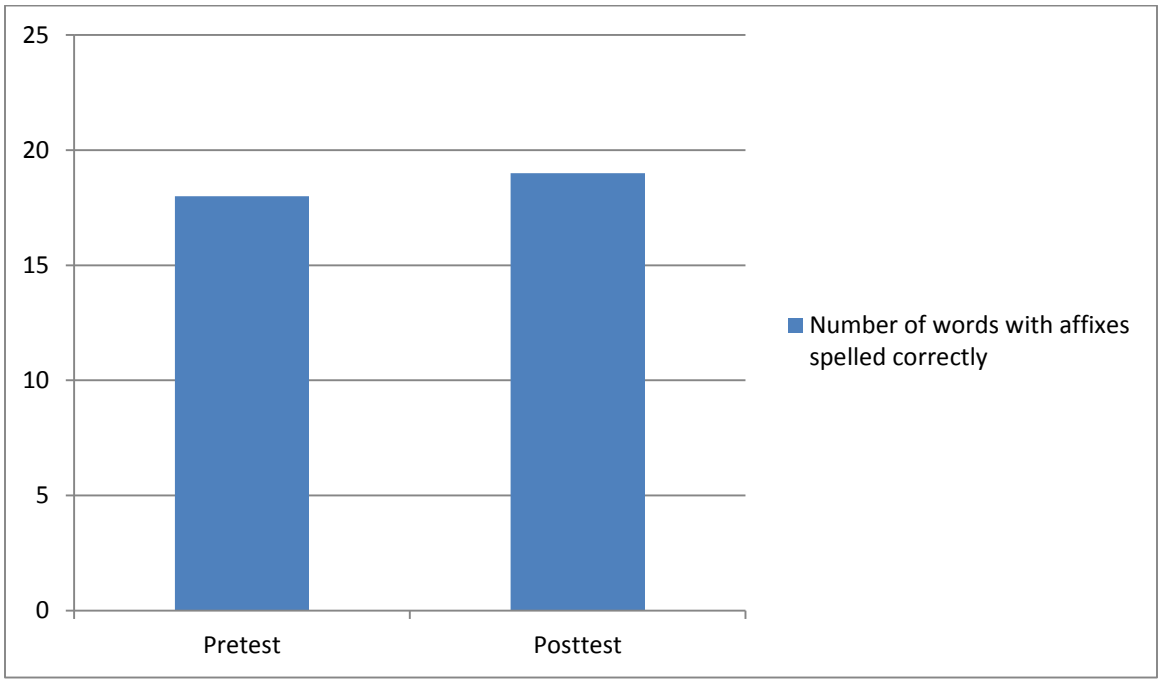

Figure 11. Annie's pretest and posttest scores from the teacher made spelling test, only counting correctly spelled affixes.

On the exit slips, Annie scored a 100% in the first week, and then decreased by half to 50% in weeks 2 and 3. She increased her score to 62% in week 3, but her score steadily decreased to 50% in week 5 and 25% in week 6. During week 2, Annie correctly identified the meaning of the affixes re- and –y, however, she incorrectly identified the meanings of the affixes mis- and –ly. For week 3, Annie correctly defined the suffix –er and the word unkind, she also used the suffixes –er and –est appropriately in a sentence. She did not select the correct definitions for un-, dis-, and –est, and confused the meaning of dissatisfied with satisfied. During week 4, Annie selected the correct definition for the words impossible and incapable, and used the right spelling for the words baker, actor and server. Annie did not correctly define the word inhuman or impatient and confused the –or in sailor with –er. In week 5, she picked the right definition for the word illegal and the

suffix –ness, but incorrectly defined the word irresponsible and the meaning for the prefixes –ion and –tion. Lastly, in week 6, Annie correctly defined the prefix en-, however, did not identify the correct definition of the prefix em-, and confused the tenses for the suffixes –s and –es (see Table 6 and Figure 12).

Table 6

Annie's weekly exit slip scores and affixes not yet mastered.

Week/Affixes	1 Over-/ pre- & -ed/-ing		2 re-/mis- & -ly/-y		3 un-/dis- & -er/-est		4 in-/im- & -er/-or		5 il-/ir- & -ion/-tion /-ness		6 en-/em- & -s/-es	
Score	4/4	100%	2/4	50%	4/8	50%	5/8	62%	2/4	50%	1/4	25%
Affixes not yet mastered			Mis-, -ly		Un-, dis-, -est		In-, im-, -or		Ir-, -ion, -tion		Em-, -s, -es	

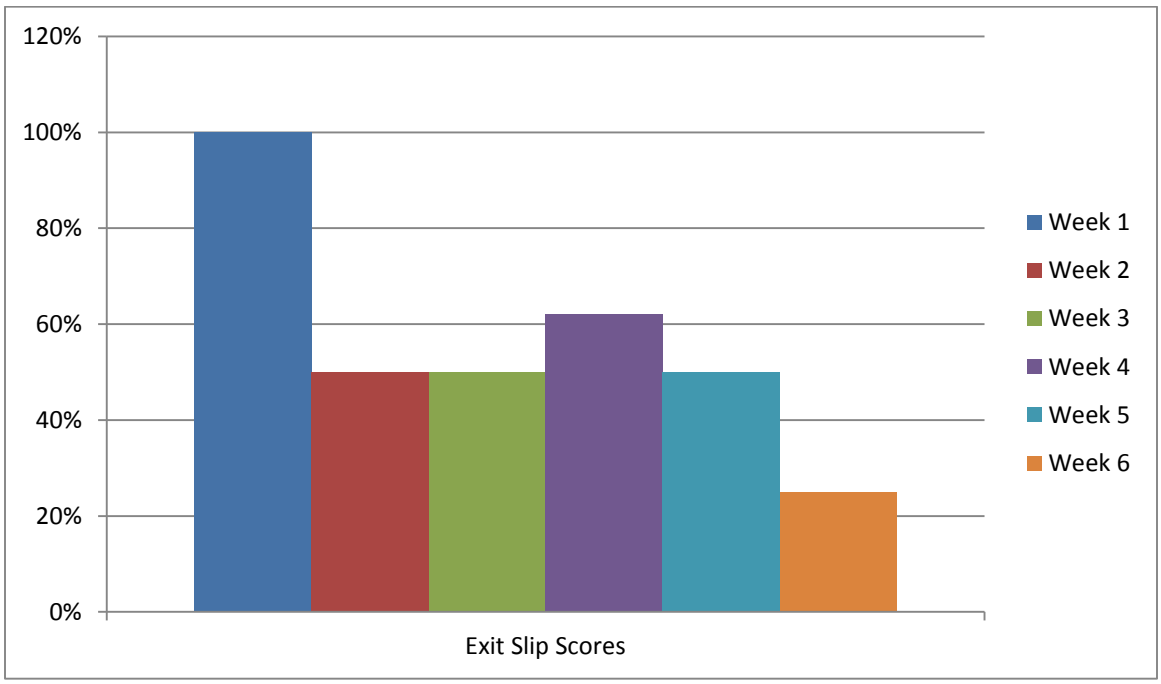

Figure 12. Annie's weekly exit slip scores.

Student four: Devon. On the pretest from the WTW Upper Level Spelling Inventory, Devon scored a 60% (3/5) in blends and digraphs, 55% (5/9) in vowels, 0% (0/7) in complex consonants, 50% (3/6) in inflected endings and syllable juncture, 50% (2/4) in unaccented final syllables and 100% (1/1) in affixes. On the posttest from the WTW Upper Level Spelling Inventory, Devon scored a 100% (5/5) in blends and digraphs, 66% (6/9) in vowels, 1/7 (14%) in complex consonants, 50% (3/6) in inflected endings and syllable juncture, 50% (2/4) in unaccented final syllables and 100% (1/1) in affixes (See Figure 13 and Table 7). Devon got all of the blends and digraphs correct in the posttest, and he also increased his score in the vowels and complex consonants categories. His scores in inflected endings and syllable juncture, unaccented final syllables and affixes remained constant.

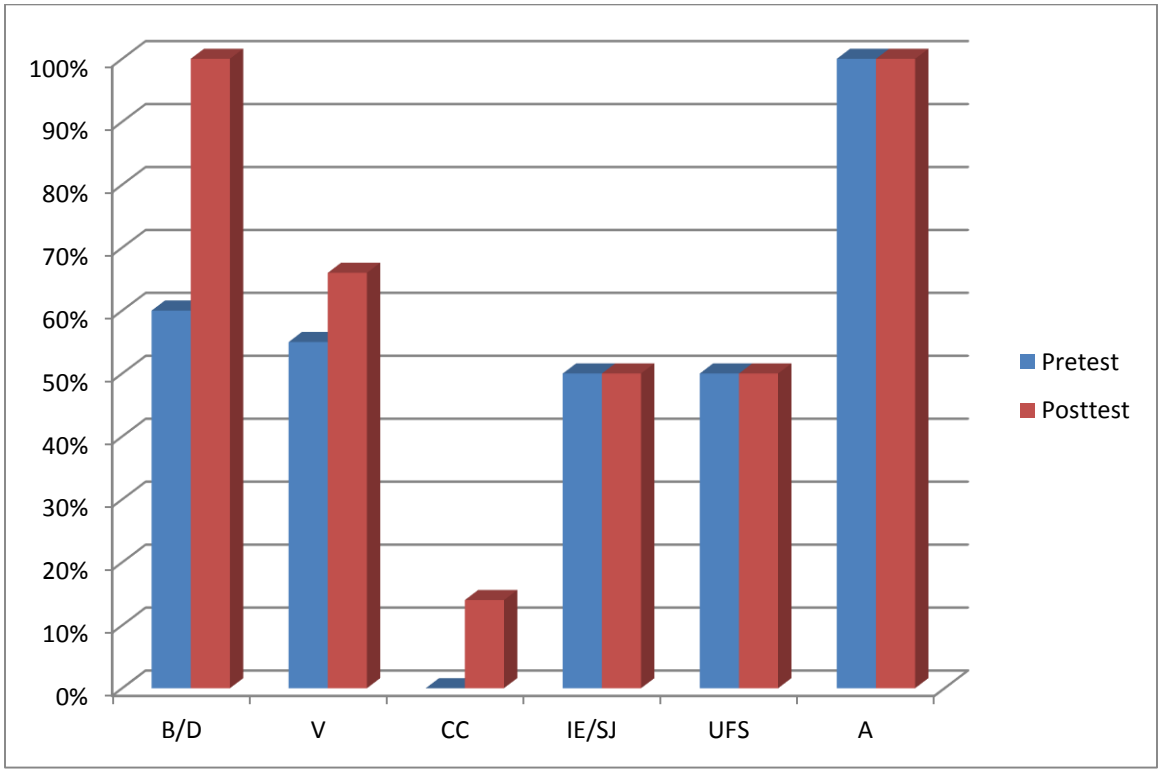

Figure 13. Devon's pretest and posttest scores from the WTW upper level spelling inventory organized by category.

Table 7

Devon's pretest and posttest scores from the WTW upper level spelling inventory organized by category.

	B/D	V	CC	IE/SJ	UFS	A
Pretest	3/5 = 60%	5/9 = 55%	0/1 = 0%	3/6 = 50%	2/4 = 50%	1/1=100%
Posttest	5/5=100%	6/9 = 66%	1/7 = 14%	3/6 = 50%	2/4 = 50%	1/1=100%

On the teacher generated spelling test, measuring whole words spelled correctly, pretest, Devon spelled 10 out of 25 words correctly. On the posttest for whole words spelled correctly, he spelled13 out of the same 25 words correctly (see Figure 14). On the same teacher generated spelling test measuring the number of words with affixes spelled correctly, pretest, Devon spelled 13 of the affixes found in the 25 spelling words correctly. On the posttest for affixes spelled correctly he spelled 22 of the affixes correctly (see Figure 15).

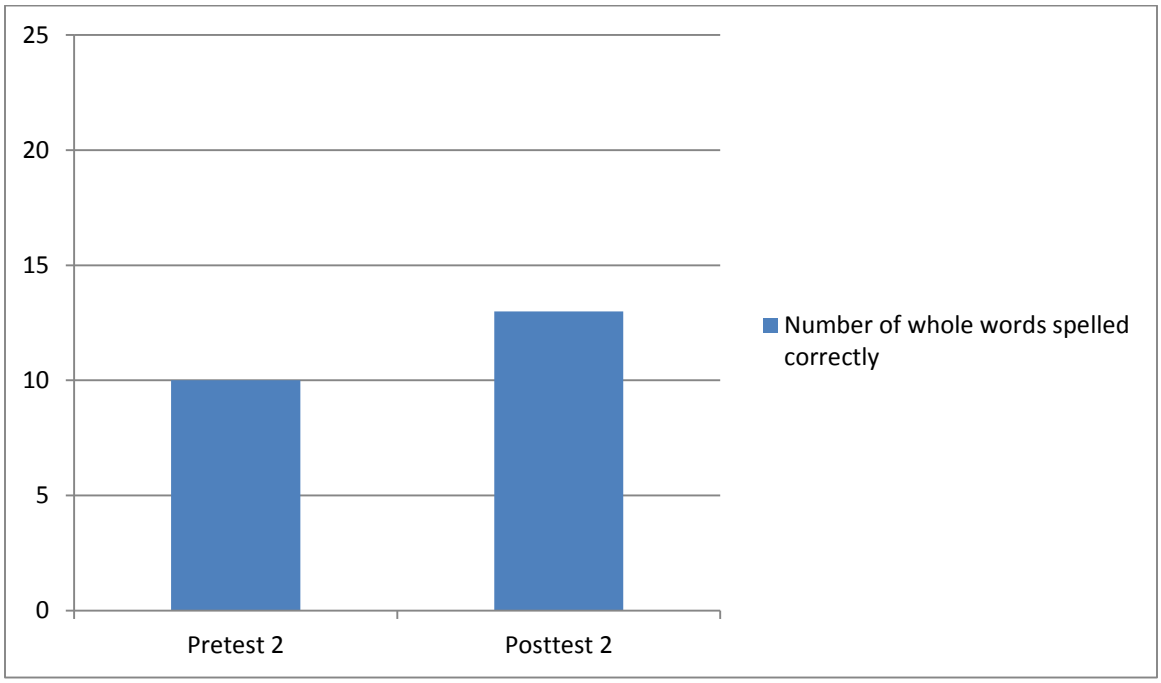

Figure 14. Devon's pretest and posttest scores from the teacher made spelling test.

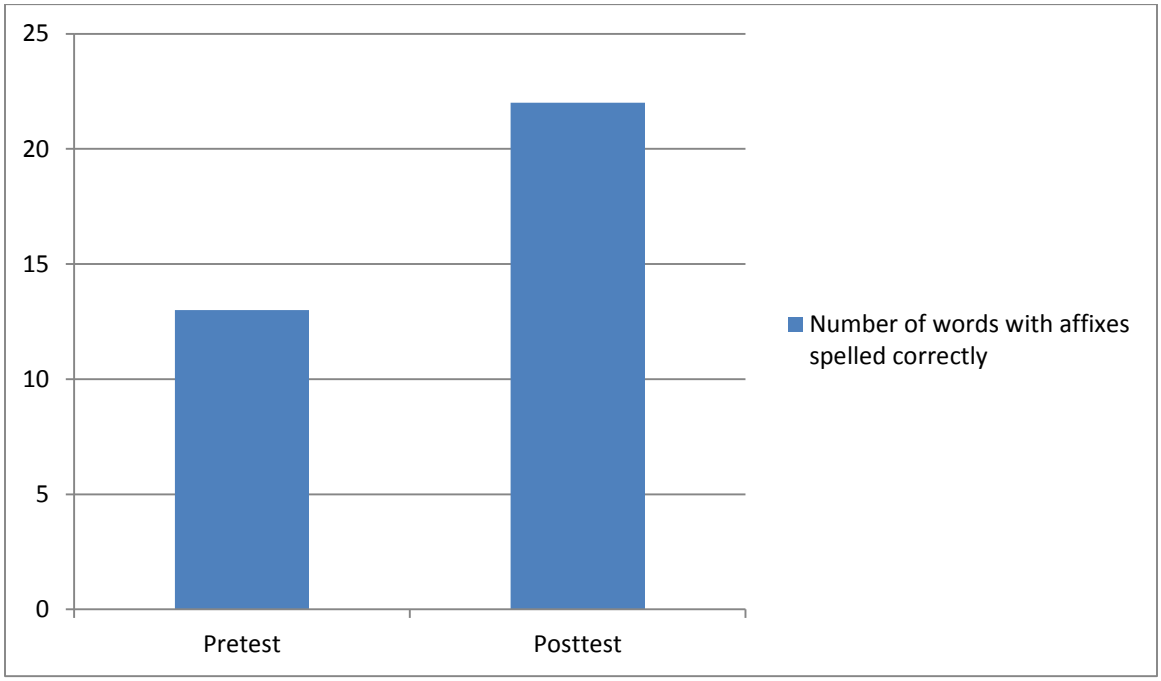

Figure 15. Devon's pretest and posttest scores from the teacher made spelling test, only counting correctly spelled affixes.

On the weekly exit slips, Devon scored 100% in the first week, however, decreased to 25% in week 2 and 12% in week 3. In week 4, he increased his score to 75% but dropped down again to 0% in week 5. He scored a 50% in week 6. On the exit slip for week 2, Devon knew the meaning of the prefix re-, butincorrectly defined the affixes mis-, -ly, and –y. During week 3, he only correctly identified the meaning of the suffix –est. He struggled with the affixes un-, dis- and –er, as well as defining the words unkind and dissatisfied. He also switched the meanings of –er and –est when using them in a sentence. Week 4, Devon correctly defined the words inhuman, impossible, incapable and impatient. He also chose the correct spelling for the words baker and actor. However, he confused the –or in the word sailor for –er and confused the –er in the word server for –or. For week 5, Devon struggled to correctly define the words illegal, irresponsible as well as the affixes –ion/-tion and –ness. During week 6, Devon's scores picked up and he only confused the tenses for the suffixes –s and –es, while correctly defining the prefixes en- and em-.

Table 8

Devon's weekly exit slip scores and affixes not yet mastered.

Week/Affixes	1 Over-/ pre- & -ed/-ing		2 re-/mis- & -ly/-y		3 un-/dis- & -er/-est		4 in-/im- & -er/-or		5 il-/ir- & -ion/-tion /-ness		6 en-/em- & -s/-es	
Score	4/4	100%	1/4	25%	1/8	12%	6/8	75%	0/4	0%	2/4	50%
Affixes not yet mastered			Mis-, -ly, -y		Un-, dis-, -er, -est		-or		Il-, ir-, -ion, -tion, -ness		-s, -es	

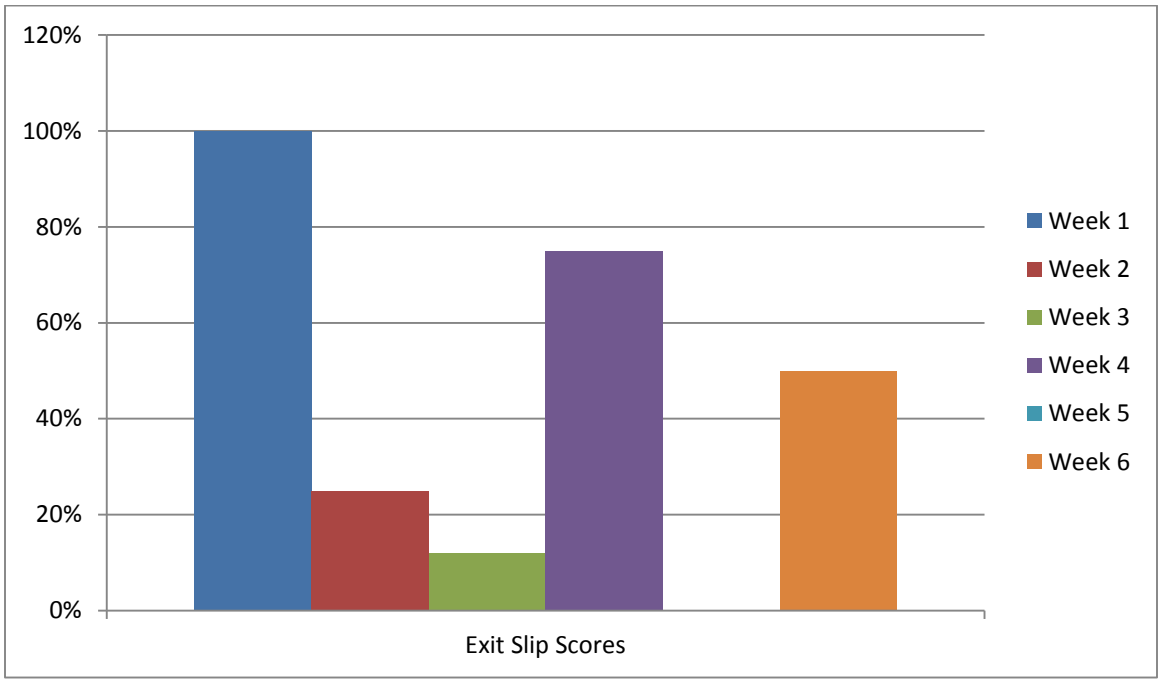

Figure 16. Devon's weekly exit slip scores.

Conclusion

This chapter's purpose was to show the results and data collected from this case study. This data included: pre and posttest scores from the Words Their Way Upper Level Spelling Inventory assessments (Flanigan, Hayes, Templeton, Bear, Invernizzi & Johnston, 2011). Also included in the data, were scores from a teacher created spelling test including prefixes and suffixes that were covered in the intervention program. Scores for this test were broken up into two parts. Part one, was graded based on whether or not the students spelled each word entirely correct, not unlike a traditional spelling test. Part two, graded students on their ability to spell the affixes found within each word correctly. For example, if given the word disloyal, if the student correctly spelled the prefix dis-, they received credit. This chapter also contained data taken from weekly, informal assessments in the

form of exit slips. These exit slips asked students to select the correct definition for the affixes covered during that week or asked them to define the meaning of words using the chosen affixes.

The final chapter will discuss some of the limitations and changes made throughout this case study, as well as connect the findings from this chapter to the research summarized in chapter two and its relationship to special education law and the Common Core State Standards.

Chapter Five

Conclusions

This case study focused on teaching basic morphology skills in a direct, small group setting, as a strategy to support vocabulary development. Over the course of six weeks, four students participated in an intervention program to target their specific literacy needs. Chapter Four presented the data collected throughout this case study, formal assessments such as the Words Their Way Upper Level Spelling Inventory (Flanigan, Hayes, Templeton, Bear, Invernizzi & Johnston, 2011) and teacher-generated spelling tests, as well as informal assessments in the form of weekly exit slips. This final chapter will be divided into five sections. Connections to existing research related to teaching morphology as well as teaching literacy in an urban setting will be examined in the first section. Next, the case study's relationship to the Common Core State Standards as well as Special Education Law will be addressed. An explanation of the results displayed in Chapter Four will follow in the third section. The fourth section will include a discussion of the strengths and limitations

experienced throughout this study and the necessity for teacher and student flexibility as a success strategy. Finally, future recommendations for the participating students will be considered.

Connections to Existing Research

In Chapter Two, current research related to the topic of morphology and its role in vocabulary and reading comprehension were discussed. Among this research were articles that included studies conducted in similar urban school settings with students from similar socio-economic backgrounds and learning needs.

In this study, all of the participating students had documented histories of difficulty with vocabulary and reading comprehension. This intervention program was designed to expose them to common prefixes and suffixes and give them opportunities to practice strategies that could improve their reading fluency, vocabulary and comprehension skills. A study completed by Kieffer and Lesaux (2007) found that students with "a greater understanding of morphology also have higher reading comprehension scores" (p.138) and this trend only increases as they age. These researchers developed several key principles in order to effectively teach morphology. The case study that I created included many of these principles. For example, Kieffer and Lesaux stated that morphology should be taught as a "distinct component" of an explicit vocabulary improvement program. They stated that the "most effective approaches provided multiple exposures to words, introduced the words in meaningful contexts, and involved students in deep processing of the words' meanings" (2007, p. 139). All of the prefixes and suffixes my students were exposed to were in the context of vocabulary words that they would encounter on a daily basis. They reviewed the

same set of prefixes and suffixes over the course of a week and completed multiple activities that gave them plenty of exposure to the words. They also identified the words within reading passages in order to provide some context for how they might encounter the words outside of the intervention sessions. As a group, we engaged in meaningful conversations about how the words containing the affixes affected the meaning of the sentences and reading passages as a whole. We often discussed the difference between the literal meaning of a particular affix and the meaning we were meant to derive based on the context of the reading passage.

Another article, published by Lesaux, Harris and Sloane (2012), described an intervention program they created that addressed the literacy needs of struggling students, but also took into account how their "approach could promote students' efforts toward academic success" (p. 233). In other words, did their participants' academic motivation increase in the process of having a supportive intervention program in place? The answer they found was that structured vocabulary and language instruction can "facilitate students' academic motivation" (p. 237). Due to the positive results of this study, I attempted to maintain the same perspective on student motivation while completing this case study. My participating students seemed to be thoroughly engaged in the activities during the intervention sessions. This was a big change from behaviors I had previously observed in class. I had spent a significant amount of time supporting these students in the general education classrooms and often witnessed their lack of engagement or participation in whole and small group lessons. All four students rarely participated in classroom discussions based on academic topics or volunteered to read aloud or share their answers. I saw a big difference in their attitudes during our intervention sessions. A

few times my students came to our sessions upset, stressed, frustrated, but they all eventually made the choice to participate in our activities and discussions. Even with the activities that might be considered juvenile for middle schoolers, for example, lower level reading passages, they maintained positive attitudes. I believe that they knew these activities had been specially picked to support their specific literacy needs. In addition, they were in a small group with other students they knew well, who had similar learning needs; they felt safe starting at the level they were at, instead of trying to perform at their expected grade level.

The study conducted by Hurry et al. (2005) found that when teachers are provided with the appropriate training and structure for teaching morphology it "produces significant gains in spelling" (p. 3) among their students. I found this trend to be true among my participating students. All four of them made gains between the pre and post spelling tests I created. Similarly, I scored their teacher-generated pre and post spelling tests the same way Hurry et al. (2005) did during their study. This involved giving my students credit for correctly spelling the affix even if they did not spell the entire word correctly.

Shippen, Houchins, Steventon and Sartor (2005) researched the effects of direct instruction (DI) reading programs on middle school students in urban settings. They completed a six-week-long study that found out that all students participating in a direct instruction reading program "showed gains in word reading efficiency, reading rate, and reading fluency" (p. 180). I modeled my case study around a six week time line as well. Shippen et al. described direct instruction programs as having characteristics such as: fast

paced, scripted, well-sequenced, rule-based, and highly focused. They were also to be conducted in small groups, where students are given chances to respond together or individually and receive "immediate feedback" (2005, p. 176). I attempted to replicate some of these characteristics in my own study. We moved at a pretty quick pace, and followed a similar sequence of activities during each session. I did not have many rules; rather, I modeled strategies to follow when completing their graphic organizers. The focus of each meeting was also highly specific. The characteristics that seemed to have the greatest impact on my students' motivation and learning was allowing them to answer questions and read passages aloud in unison and individually. They also seemed to really benefit from receiving immediate feedback from myself or their peers. Within the confines of this small group, I was able to help them dig deeper into the meaning of the affixes we were studying and help facilitate group discussions. Students were given a chance, in a low pressure setting, to explain their reasoning for why they may have picked one word over another. The students also enjoyed challenging each other's answers and were able to provide appropriate reasoning for the answers they selected.

Harris (2007) conducted a study that included the use of the Words Their Way (WTW) program to address the needs of struggling readers in an urban high school. The WTW program was described as "an alternative method" of teaching "phonemic awareness, spelling patterns, and morphology to improve word identification" (p. 4). Harris was able to use the results from the WTW spelling inventories along with samples of the students' written work, to divide her participants into groups based on what spelling patterns they had mastered. I used the upper level WTW spelling test as a formal pre and post assessment and as a way to determine specific spelling patterns with which my students

had the most difficulty. The WTW program uses activities such as word and sound sorts to teach specific spelling patterns (Harris, 2007). I modeled my notecard manipulation activity off of the word sorts found in the WTW program. However, instead of using the activity to help identify spelling patterns, this strategy allowed them to create words with the different affixes. During the first and second sessions, students practiced following the series of steps needed to complete the note card activity. They flipped through base word cards and had to group them with the appropriate affix. They then had to say the word aloud and decide if it was a real word. Next, they wrote the word parts down in a graphic organizer and defined the new word. This process was similar to the procedure that the WTW program recommends using, "demonstration, sort and check, reflect, and declare" (p. 9). Students were also asked to explain how they came up with the definition; at first they would usually say they had heard it on TV or read it in a book, but eventually they began to connect the newly learned affixes with their background knowledge of the base words and create their own definitions.

Connections to Common Core State Standards and Special Education Law

This study's focus on morphology is aligned with both the Common Core State Standards (CCSS) and Special Education law. The seventh and eighth grade students who participated in this case study were expected to "determine or clarify the meaning of unknown and multiple-meaning words and phrases*" while utilizing strategies such as "*us[ing] common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word" (Common Core State Standards Initiative, 2015). The core foundation

of this study was to increase my students' knowledge of common prefixes and suffixes and participation in this study hopefully brought them closer to fulfilling this state standard.

The four participating students all had an up-to-date, documented Individualized Education Programs (IEPs) that aligned with the guidelines set forth in the Individuals with Disabilities Education Improvement Act (IDEA) of 2004. Some of the rights outlined in this act include: "zero reject, free appropriate public education (FAPE), least restrictive environment (LRE), nondiscriminatory evaluation, parent and family rights, and procedural safeguards" (Friend, 2001, p. 14). The section on free appropriate public education or FAPE ensures that students have a detailed IEP that addresses their specific learning needs through "specially designed instruction" (p. 14) and allows them to access the general education curriculum. This case study was designed around the unique needs of all four participating students. Being the IEP provider for these students over the last two years has allowed me to really get to know them, their strengths and where they need to most support.

Explanation of Results

Chapter Four discussed in depth the individual results of each student; this next section will provide a summary of the overall results from this study.

The pre and post-tests 1, from the Words Their Way Upper Level Spelling Inventory (Flanigan, Hayes, Templeton, Bear, Invernizzi & Johnston, 2011) showed that all of my students struggled with complex consonants, such as "-tch" or "dge." Two students increased their scores from this category. The inflected endings and syllable juncture category was also difficult for all of my students; two increased their scores and two had

their scores remain the same. In the blends and digraphs category, one student increased his score to 100, two students' scores remained the same, and one student's score decreased. The vowels category seemed to be the strongest for my students; everyone scored above 44%. For the unaccented final syllables category, all four students' scores remained the same between their pre and post-tests. In addition, all four of my students correctly spelled the single word representing the affix category. Based on these results, my participating students made some progress or remained at the same level in regards to these specific spelling categories. Though this test was a good way of determining everyone's current spelling levels, it did not contain many words with affixes and thus could not be a proper assessment of how many new affixes my students learned throughout the intervention.

The scoring for the second spelling test, which was teacher created, was spilt up into two parts. This spelling test contained words with the prefixes and suffixes included in the study. I kept track of the number of words they spelled entirely correct as well as the number of words where they only spelled the affix correct, resulting in four different scores. All of the participating students had very similar scores. On the pretest measuring whole words spelled correctly, the students spelled between 9 and 11 words completely correct. On the posttest measuring whole words spelled correctly, they spelled between 13 and 15 words completely correct. On the pretest measuring only the number of affixes spelled correctly, one student spelled 18 of the affixes correct, and the other three students spelled between 13 and 14 affixes correct. On the posttest measuring only the number of affixes spelled correctly, one student spelled 19 affixes correct and the remaining three students spelled between 21 and 22 affixes correct. These results gave me a better picture

of what affixes my students were familiar with at the beginning of the study and which ones they knew at the end. Three students spelled at least 7 more affixes correct on the posttest compared to the pretest. The remaining student had scored relatively high on the affix only pretest and increased their score by 1 point in the posttest. Based upon these results, I have found that this study resulted in a moderate amount of success in regards to increasing their knowledge of prefixes and suffixes.

Kieffer and Lesaux (2007) stated that vocabulary instruction should include "explicit instruction of a limited number of well-chosen words" (p. 136) and I believe that with a longer time frame and a smaller number of words to learn, my students would have had more success in this study. Hurry et al. (2005) argued that a beginning step in any intervention program should be ensuring the teacher's knowledge of the content being taught. Having taken a class on medical morphology, teaching morphology within the Language! Curriculum for multiple years and studying current morphology research, I believe I possessed an adequate amount of background knowledge. Another reason why I may have ended up with these results would be the isolated process of my intervention program. The words we worked with were common, but not directly related to the material my students were learning in their classes, and they were not given additional exposure to these words outside our intervention block. Harris (2007) found success by implementing a program that was blended into the established literacy curriculum. Furthermore, Snow, Lawrence and White (2009) designed a program that allowed students to encounter the newly learned words in their math, science and social studies classes. I believe that my students viewed our intervention sessions as a mini-class separate from their normal

classes, and may have had difficulty transferring the skills learned in intervention to their daily routines.

Strengths and Limitations

A thorough understanding of the literacy needs of each participating student was needed in order to ensure the creation of an effective intervention program. All four students have a long history of struggling with reading comprehension, fluency and vocabulary skills. The following section will discuss the strengths and limitations found during and after this study.

One of the strengths of this study was the relationship history of the participating students. All four students had had me as an IEP provider for at least a year prior to the start of this study, and all had successfully completed level D in the replacement reading curriculum, Language! (Greene, 2015), with me during the previous school year. They all knew each other well and were comfortable spending time together. However, this familiarity would on occasion result in off topic conversations and required teacher prompting to stay focused. The environment in which this intervention took place was both a strength and limitation. Each session was held in my resource classroom, a room with which all my students were familiar; however, we often had to share the room with my co-teacher, who was also providing intervention to a small group. This initially caused some distractions, but after a few reminders, my students were able to stay focused despite the slightly busy environment.

There were a few unpredictable incidents that proved to be limitations during this short case study. One of my students dislocated his shoulder on his dominant side, halfway through the program. I had to quickly adjust the amount writing he was supposed to complete and instead had him respond orally to the questions or I served as his scribe when completing written work. I also had to make adjustments to the intervention schedule when I had student absences do to illness or suspension. I believe that time was the biggest limitation this case study faced. The program lasted for six weeks, and ended right before our school's three-week winter break. The closer we came to winter break, the less focused my students became. If I had been able to extend the length of this study, I would have been able to collect more data on the effectiveness of this intervention. The length of each intervention session was also a limitation. In order to ensure that none of my students missed out on instructional time in other classes, we met during our school's designated intervention block. Thirty minutes was blocked off, three times a week for intervention; however, because intervention took place right after lunch and bathroom breaks, we usually only met for about 25 minutes. This meant that I had to cut some of the original activities I had planned for the 30 minute sessions and only focus on what I thought would prove to be the most effective. I chose to eliminate the activity that involved searching for prefixes and suffixes in newspaper and magazine articles because that seemed to be the most time consuming.

Regardless of the setting, time constraints, student behaviors or health factors, this case study could not have been completed without the utmost flexibility exercised by the participating students, my co-workers and I. Schools are very busy environments and teachers are responsible for providing structure and expectations during those hectic

times. The majority of students respond positively to set routines and procedures, so I know the challenges my colleagues faced by allowing me to include their students in my case study. Arriving to class a few minutes late or leaving lunch a few minutes early, even having intervention during lunch because of an impromptu school assembly, are just a few examples of my students and colleagues demonstrating their flexibility. I, myself had to adjust my expectations and schedules on an almost daily basis to accommodate my students' needs. I planned out detailed lessons and knew time would be tight and worried about wasting time. However, I had to accept and expect that students were going to come to my intervention sessions tired, hungry, frustrated, hyper, and sick and that it was up to me to make the most of the time I had. I needed to be able to read my kids and gauge their moods and change my lessons accordingly.

Recommendations

As my students finish seventh and eighth grade and move on towards high school, they will need to continue to focus strongly on improving their sight word vocabularies and reading comprehension skills. The Common Core State standards for 9th grade expect students to ''acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression" (2015). This means that as they get older, they will be introduced to more and more subject specific vocabulary. Hopefully this foundation in prefixes and suffixes can be built upon to further their ability to break apart complex or unknown words. They now know how to make and

organize vocabulary flashcards and understand the importance of repeated practice. They should continue to use the templates for the vocabulary graphic organizers in the future when learning new vocabulary, and continue to use the word attack skills they learned during intervention to define new words. Having a strong and diverse vocabulary will help them increase their reading fluency, which in turn will contribute to an increase in comprehension.

My recommendation for families to better support the morphology development in their students would be exposure and repetition. Having students encounter words with known prefixes or suffixes outside the school environment could help them appreciate the practical aspects of morphology. Also, challenging students to use, create and define unfamiliar words with known affixes could be a more engaging task then having them memorize a list. I would also encourage family members to establish a structured time for the student to practice and review newly learned affixes on a weekly basis in order to build automaticity.

Educators must take into account their own understanding of morphology before attempting to teach it, as seen in the research conducted by Hurry et al. (2005). Teachers should also consider teaching morphology as a distinct component of the reading curriculum; one building block that could help support and develop vocabulary and reading comprehension skills. Teachers who want to include morphology in their lessons should plan to spend time explicitly teaching the prefixes and suffixes, while also allowing for practice and discussion. Focus on deepening the understanding and use of a small amount

of affixes, rather than providing a list to be memorized. Lastly, remember to keep your end goal in mind and remain flexible and cognizant of your students' learning needs.

Conclusion

This case study centered on teaching morphology skills to urban middle school students as a strategy to support future vocabulary and reading comprehension development. Sessions were taught in an explicit, structured manner, in a small group environment. This study's procedures were modeled after and supported by previously published research and aligned with Common Core State Standards and in accordance with Special Education law as it is stated in IDEA. Though the success of this case study was moderate, its completion highlights a more important component, the necessity of being flexible in the classroom. This is a key characteristic when delivering any kind of instruction, small or large, especially to students with specific learning needs. As a teacher working in an urban environment, many of my students come to school with physical and emotional needs that must be met before instruction can begin. Stable housing and proper nutrition is a weekly concern for some of my students, as well as reliable transportation to and from school and unmet medical needs. I cannot always predict the moods, behaviors or actions of my students, who will get into a fight, who is feeling sick, who is struggling with family issues at home. However, I can plan for this unpredictability by being flexible. It is my job as an educator to be aware of these precipitating factors and adjust my instruction appropriately. In the end, it does not matter how much material I have covered with my students, but rather, did my students truly absorb and engage with the material I was able to cover.

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APPENDIX A

Weekly Schedule

Monday		Wednesday		Friday	
10 min	Introduce weekly prefixes & suffixes	10 min	Review weekly prefixes & suffixes	10 min	Review weekly prefixes & suffixes
10 min	Making New Words (Notecard Manipulation)	10 min	Making New Words (Notecard Manipulation)	10 min	Making New Words (Notecard Manipulation)
10 min	Reading passage, Id prefixes & suffixes, Exit slip	10 min	Reading passage, Id prefixes & suffixes, Exit slip	10 min	Reading passage, Id prefixes & suffixes, Exit slip

APPENDIX B

Prefix/Suffix Wordlist

Week	Prefixes	Suffixes
1	Over-, Pre-	-ed, -ing
2	Re-, mis-	-ly, -y
3	Un-, dis-	-er, -est
4	in-, im-	-er, -or
5	il-, ir-	-ion, -tion, -ness
6	En-, em-	-s, -es

APPENDIX C

Note Card Manipulation Reference Sheet

Prefix	+	Base/Root	=	New Word

Base/Root	+	Suffix	=	New Word

APPENDIX D

Selected Reading Passages

Week	Prefixes	Reading Passage	Suffixes	Reading Passage
1	Over-, pre-	The Candle Store, For the Love of Reading	-ed, -ing	Edison's Light Bulb, The Birthday Party
2	Re-, miss-	The Cycle of Recycling, Greta's Mistake	-ly, -y	The Goal, Rainbows
3	Un-, dis-	A Gift	-er, -est	Fairy Flies
4	In-, im-	Jill Plays Softball	-er, -or	The Farmer and the Painter
5	Il-, ir-	Jill Plays Softball	-ion, -tion, -ness	School
6	En-, em-	The Sun	-s, -es	Cats

APPENDIX F

Anecdotal Data

Date	Instructional Plan	Specific Observations
11/10	-Pretest 1 -Pretest 2 -Overview of intervention -Introduction to pre-, over, ed- and ing-	-Students were excited to be starting intervention
11/12	-Review -Read passage -Make notecards	-Annie absent
11/14	-Review -Read passage -Worksheets -Finish notecards -Exit slip	-Annie absent
11/17	-Introduce re-, mis-, -ly and –y -Make notecards -Catch up on reading passages (pre-/over-)	-Students read reading passages aloud individually, instead of together, this worked a lot better. -Annie catch up work
11/19 & 11/21 (60 min)	-Review -Worksheets -Read passages (individually)	-Annie absent -While one student read aloud, the others were asked to hold a thumb up whenever they heard a word

		with a target prefix or suffix -Combined session because of event on Fri 11/21
11/24	-Introduce un-, -dis, er- and –est -Notecards	-Devon absent -Ricky late -Annie catch up work -Short week for Thanksgiving
11/25	-Review -Read passage -Worksheet	-Devon and Annie catch up
11/26	-Review -Notecards -Read passage -Exit slip	-Devon absent
12/1	-Introduce in-, im-, -er, -or -Notecards	-Devon catch up work
12/3 & 12/5 (60 min)	-Review -Read passages -Worksheet -Exit slip -Introduced next week's work b/c no school on mon 12/8	-Teacher went home sick & Devon suspended on 12/3 -Ricky not in good mood because he got in trouble last period, not participating at 1st but participated during last 10 min
12/10	-Review ir-, il-, -ion, -tion, -ness -Notecards -Worksheets	
12/12	-Review -Worksheets -Read passage -Exit slip	
12/16	-Introduce en-, em-, -s and –es -Notecards -Worksheets	-Annie and Devon catch up work
12/17	-Review -Notecards -Read passage -Exit slip	-Ricky absent
12/19	Posttest 1 Posttest 2	-Ricky make up work

APPENDIX G

Teacher Created Spelling List (Pre/Post-test)

1. Overcome
2. Pretest
3. Skated
4. Playing
5. Redo
6. Mistake
7. Lovely
8. Creepy
9. Unhappy
10. Disagree
11. Taller
12. Shortest
13. Incomplete
14. Impossible
15. Teacher
16. Actor
17. Illegal
18. Irregular
19. Motion
20. Fashion
21. Lateness
22. Enjoy
23. Employ
24. Chairs
25. Foxes