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The Effect of Explicit Vocabulary Instruction on Elementary Students' Vocabulary Knowledge and Reading Comprehension: An Action Research Study

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THE EFFECT OF EXPLICIT VOCABULARY INSTRUCTION ON ELEMENTARY STUDENTS' VOCABULARY KNOWLEDGE AND READING COMPREHENSION: AN ACTION RESEARCH STUDY

by

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DEDICATION

This is dedicated to my husband, Colin and my two daughters, Jada and Olivia. I could not have achieved this goal without your continued love, and encouragement throughout this process. You believed in me and helped me reach my fullest potential. I love you all dearly.

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ABSTRACT

Reading comprehension seems to be a significant challenge for rising fifth graders with limited vocabulary knowledge. A possible solution is to provide them with explicit vocabulary instruction which may positively impact their reading comprehension. This action research aimed to evaluate the effect of implementing explicit vocabulary instruction delivered through Schoology on fifth graders' vocabulary knowledge and reading comprehension at an urban elementary school in the southeastern United States. This study also sought to analyze students' perceptions of the usefulness of the online vocabulary learning modules. A convergent mixed-method approach was applied to answer the research questions. The quantitative data used descriptive statistics, and the findings showed that the mean scores of the vocabulary post-tests significantly increased from the pretests. The pre-and post-test reading comprehension found that the post-test significantly increased from the pretests. In addition, the learner experience survey found that most participants considered instructional modules helpful for acquiring new vocabulary knowledge. Furthermore, an inductive approach analyzed the qualitative data gathered from semi-structured interviews. This data showed that even though explicit vocabulary instruction impacted students' vocabulary knowledge, there were areas in need of attention, such as the need for more explicit instruction in Latin and Greek roots. For elementary educators, practical implications on literacy education were the need to collaboratively design a vocabulary curriculum and explicitly teach vocabulary strategies to students.

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CHAPTER 1

INTRODUCTION

National Context

Spencer, Wagner and Petscher (2018) purported that only a third of the fourth graders in the United States are competent in reading comprehension by the end of the school year. These statistics are critical because these fourth graders are promoted to fifth grade and continue to struggle with reading comprehension. The National Assessment of Educational Progress (NAEP) investigated the vocabulary proficiency and reading comprehension of fourth, eighth, and twelfth graders. The vocabulary results from the 2009 and 2011 NAEP indicated a strong relationship between vocabulary knowledge and reading comprehension.

According to the National Center for Education Statistics (NCES), vocabulary results showed that students who were successful when answering vocabulary questions, were also successful in reading comprehension (NCES, 2012). The rising fifth-graders, who scored in the 75th percentile in reading comprehension in 2011 also had the highest average vocabulary scores. However, the lower performing rising fifth-graders at or below the 25th percentile in reading comprehension had the lowest average vocabulary scores (NCES, 2012). The results also revealed that the students in fourth grade who received lunches for or at a reduced price and the students who were English language learners scored lower on both the vocabulary and reading comprehension tests.

In addition, the NAEP reading scores showed a decrease since 2015 in the lower performing groups of rising fifth graders. The lower performers fell between the 10th and 25th percentile of the reading scores on the Nation's Report Card, 2015. Based on the data from the Nation's Report Card, reading comprehension seems to be a major issue for rising fifth-graders on the national, state, and local levels. Therefore, it is important to establish the need for explicit vocabulary instruction and evaluate its impact on reading comprehension. Reading becomes more complex at the intermediate grades and research has shown that there is a strong relationship between reading comprehension and vocabulary knowledge (Mancilla-Martinez, & Lesaux, 2010). Various researchers have established a strong correlation between vocabulary knowledge and reading comprehension (Cunnigham & Stanovich, 1997; Senechal, 2006). Lack of explicit vocabulary instruction may be a factor impacting reading comprehension of low-performing fifth-grade students. Therefore, providing consistent explicit vocabulary instruction may help enhance students' reading comprehension skills.

Furthermore, studies have shown that, in comparison to other components of literacy, vocabulary instruction has not received as much attention (Maynard, Pullen, & Coyne, 2010). Reading instruction tends to focus on explicit comprehension strategies such as finding main ideas, summarizing, analyzing text structure, and making inferences. However, students must understand the words embedded in reading passages before they can apply the reading strategies being taught to improve their reading instruction. In addition, due to the demands on teachers to prepare students for standardized tests, less time is spent on teaching vocabulary (Maynard et al., 2010). Due to time constraints, vocabulary instruction usually takes the form of traditional methods

of memorizing words and definitions for weekly tests. This method provides few opportunities for students to use strategies to determine the meanings of unfamiliar words. Research also proved that the traditional methods of teaching vocabulary do not foster growth in vocabulary (Beck, McKeown, & Kucan, 2005; Cunningham, 2009; Graves, 2006).

Roskos, Zulolo, and Primm (2017) stated that explicit vocabulary instruction with plenty explanations of words, increases students' possibilities to learning academic word meanings that can be practiced in language arts and different subject areas. To decrease the expanding gap between struggling readers and strong readers, Coyne, Simmons, Kame'enui, and Stoolmiller (2004) suggested explicitly teaching word meanings and implementing rich vocabulary instruction. In addition, Johnson, Gersten, and Carnine (1987) found that computer assisted instruction, which is explicit instruction using technology without direct instruction from the teacher, can enhance students' knowledge of unfamiliar words as well. Bryant, Goodwin, Bryant, and Higgins (2003); Jitendra, Edwards, Sachs, and Jacobson (2004); and Kuder (2017) revealed that technology use for vocabulary instruction is more effective when appropriate strategies and applications are used. Using technology intentionally in the classroom may increase self-direction among students as they take control of their learning and the teachers become facilitators of the educational experience (Bjerede & Bondi, 2012; Magley, 2011). However, in regard to the current trend of digital literacy in schools, there is a gap in literature which this action research will help fill by highlighting the delivery of explicit vocabulary instruction using Schoology.

Local Context

There are seven elementary schools in the district where the study occurred, three of which are Title 1. I teach at one of these Title 1 schools, meaning at least 40% of the students are from low-income families and receive free or reduced lunch. The reading performance at this school is below the performance of their non-Title one counterparts. While the non-Title 1 schools had an average of 74% of students who exceeded expectations in reading, Drayton Mills Elementary received a below-average rating on the 2018–2019 state report card with only 22.6 % meeting or exceeding expectations in reading and 77.4% failing (SC State Report Card, 2019). As a whole, 38% of all Spartanburg District 7 elementary students who took the standardized reading test met or exceeded expectations in reading (SC State Report Card, 2019).

Furthermore, the other three Title 1 schools also have low-performance rates in reading. These score averages are 22.6%, 20.6%, and 17% meeting or exceeding expectations (SC State Report Card, 2019). This data clearly shows deficits in reading instruction at Title 1 schools in Spartanburg District 7.

Additionally, for the 2020-2021 academic school year, students took an iReady assessment which measures students' reading and vocabulary levels. iReady is a personalized reading instruction program that's research-based and successfully teaches students of all skill levels (Cunningham & Reutzel, 2019). For the 2021 school year, after taking the iReady reading diagnostic, in September, only 6% of the participants were on a fifth-grade reading and vocabulary level, with 86% scoring below expectations. One possible solution to help close the achievement gap is to provide these students from a Title 1 school with explicit vocabulary instruction, which will help broaden their

vocabulary knowledge and enhance their reading comprehension skills. In order to implement the proposed solution, it is necessary to examine factors influencing reading achievements for students who enter the upper elementary grades with reading difficulties (Kent, Wanzek, & Otaiba, 2017).

Teaching in Title 1 schools is my passion, and 2021-2022 is my 13th year as a teacher of Title 1 schools in the United States. I notice the difficulties students have with reading comprehension. Even at my present school, many students can use their knowledge of letter sounds to pronounce words fluently, but when asked about the meanings of the words, students experience difficulties. Also, teachers seem to spend less time teaching vocabulary explicitly due to the demands of high-stakes testing and the need to complete the curriculum. Based on my experience, students cannot comprehend what they read because of limited vocabulary knowledge, and many of them struggle with reading comprehension and using context clues. However, when I provide instruction on using context clues, students can extrapolate the meanings of some unfamiliar words. Therefore, explicit vocabulary instruction may be a solution that can help the fifth-grade readers who are struggling at a title 1 school in the southeastern United States.

Statement of the Problem

According to the National Assessment of Educational Progress (NAEP, 2017), since 2015, there has been a decrease in the scores of lower-performing fourth-graders or rising fifth-graders. The lower performers fell between the 10th and 25th reading percentiles on the Nation's Report Card. On average, South Carolina's reading scores were lower than the nation's in 2017 (NAEP, 2017). Freeboy and Anderson (1983) and

Stanovich (1986) suggest a strong relationship between vocabulary and reading comprehension. Therefore, the more words students understand, the better their reading comprehension. However, students who live in poverty often lack exposure to vocabulary at home. This distinction leads to children entering schools with different experiences and levels of knowledge, and children with limited background knowledge may have difficulties learning new content (Arum & Roksa, 2011; Cunnigham & Stanovich, 1997; Senechal, 2006). Therefore, educators teaching in Title 1 schools' main task should be to provide explicit vocabulary instruction to improve their reading comprehension (Arum & Roksa, 2011; Cunnigham & Stanovich, 1997; Senechal, 2006).

Additionally, using technology to teach vocabulary explicitly has been supported by empirical research, which revealed that the appropriate use of technology is a powerful tool for vocabulary instruction and helpful to all readers when they use the communication and interaction features (Watts-Taffe & Gwinn, 2007; Reutzel & Cooter, 2013).

Many students have access to technology, as evidenced by the NCES (2018), which revealed that, in 2015, 94 % of students between the ages of 3 and 18 had access to technology at home, and 61% had internet access. Research also showed that students accessed the internet during 86% of their time at home and 65% at school. Even though researchers recognize the importance of integrating technology, little was documented or known about technologies for vocabulary learning (Huang, 2015). Advancements in technology have motivated students and helped improve their academic performances (Chen & Hwang, 2014; Huang, Huang, & Wu, 2014; Huang, Hung, & Chen, 2014). Therefore, one possible solution is for educators to use technology to teach vocabulary

strategically and explicitly in ways that support literacy development (Spencer, Goldstein, & Kaminski, 2012).

Given that vocabulary and comprehension are necessary for college and career readiness, there is no wonder there is substantial focus on these skills. However, Nelson, Dole, Hosp, and Hosp (2015) noted that few studies were conducted on vocabulary classroom instruction. In addition, Nelson et al. (2015) claimed that there were only five studies examining the vocabulary instruction that teachers provide, and none of these studies were implemented in the primary grades. However, recent research on vocabulary instruction mainly focused on students in the primary grades, leading to a gap in the upper elementary grades (Gallagher, Barber, Beck, & Beuhl, 2019; Harmon & Wood, 2018; Moody, Hu, Kuo, Xu, & Lee, 2018). Therefore, this action research will help provide information on implementing explicit vocabulary instruction delivered through Schoology to improve fifth graders' vocabulary knowledge and reading comprehension in an urban elementary school in the southeastern United States.

Purpose Statement

The purpose of this action research was to evaluate the effect of implementing explicit vocabulary instruction delivered through Schoology on fifth graders' vocabulary knowledge and reading comprehension at an urban elementary school in the southeastern United States.

Research Questions

Three research questions guided this study:

1. How does explicit vocabulary instruction impact students' vocabulary knowledge in online learning modules?

2. How does explicit vocabulary instruction impact students' reading comprehension in online learning modules?

3. What are students' perceptions of the explicit vocabulary instruction in online learning modules?

Researcher Subjectivities and Positionalities

A pragmatic worldview was most appropriate for this research since it emphasized the importance of using the best method to explore a phenomenon being studied. My main goal was to evaluate the effectiveness of explicit vocabulary instruction and its impact on reading comprehension scores. A pragmatic worldview used the most appropriate approaches to investigate the problem rather than the idea that the scientific method is the only method that can be used to discover the truth about the world (Kivunja & Kuyini, 2017). My pragmatic worldview strengthened my research because I used both quantitative and qualitative methods.

As an insider investigating my practice, I was familiar with the participants, and they worked comfortably with me since we share commonalities, such as our socio-economic backgrounds. In this way, I understood what it felt like to work hard and have high expectations to avoid repeating that cycle. These expectations were communicated to my students daily. As an Afro-Caribbean teacher, I quickly built rapport with students from diverse racial and ethnic backgrounds. This impacted my research since I was sensitive to their cultural backgrounds. In addition, as a teacher conducting research at my school, I was more knowledgeable of the setting in which my research occurred.

Even though I had direct access to the participants in my study, I ensured collaboration by asking parents to sign parental consent forms and asking students to sign

assent forms. Therefore, I did not have power over those involved in the study. Herr and Anderson (2005) stated, “insider researchers often collaborate with other insiders as a way to research that not only might have a greater impact on the setting but is also more democratic” (p.36). However, when the researchers thought that they were being collaborative, the issue of power differences may arise.

Furthermore, as an insider conducting action research with my students, I was aware of my biases. There were times when I made assumptions about my students. For example, I sometimes thought if they read nightly, their vocabulary knowledge might increase. I also assumed that the students at Title 1 schools were already at a disadvantage since they were entering with limited vocabulary knowledge, which would affect their reading comprehension. There were times when I thought that there should be a balance between the use of technology and paper and pencil assignments.

I was careful when collecting and analyzing data as I conducted the research. To assist with my biases, I adhered to Herr and Anderson’s (2005) advice to acknowledge my role in the study and incorporate self-reflection. Being aware of my biases helped me conduct my action research with an open mind as a reflective practitioner. In addition, it was imperative to be aware of and recognize other worldviews outside of my pragmatic approach.

Definitions of Terms

Reading Comprehension

Reading comprehension is defined by Leider, Proctor, Silverman, and Harring (2013) as “the ability to decode, or simply convert graphic information to linguistic form” (p. 1460). According to the Simple View framework of reading, reading comprehension

refers to the relationship between the abilities to decode and to use oral language beyond simple word recognition (Hoover & Gough, 1990).

Explicit Vocabulary Instruction

Explicit vocabulary instruction is defined as "intentional design and delivery of information by the teacher to the children" (Spencer et al., 2012, p. 19). During vocabulary instruction, the teacher elaborated on word meaning either before or during the reading of a text. In this way, students had the opportunity to actively engage with the new vocabulary terms as they gained meaning from them.

Technology Integration

Technology integration is primarily concerned with content and effective instructional practices and not simply technology. Technology involves the tools with which we deliver content and implement practices in better ways. Integration is defined "not by the amount or type of technology used, but by how and why it is used" (Earl, 2002, p. 8). Its focus must be on curriculum and learning.

Morphological Awareness

Morphological awareness is the ability to consciously reflect on and manipulate the morphological units within words (Apel & Thomas, 2009, p.314). In other words, it is the ability to understand and interact with the smaller units of language such as prefixes, suffixes and reflect and manipulate these structures. It has shown itself to have a positive effect on reading (Tong, Deacon, Cain, Kirby, & Parrila, 2011; Wolter & Pike, 2015).

Context Clues

Context clues are "clues that the author gives intentionally or incidentally in the text to help the learners understand a difficult or an unfamiliar word" (Innaci & Sam, 2017, p. 40). This helps learners understand both the meaning and how to use the words

in context. It is figuring out the meaning of a word by looking words or phrases surrounding that word in the sentence (Hartman & Bass, 2007).

Schoology

Schoology is a cloud-based platform accessible via websites and compatible with Firefox, Internet Explorer, Safari and Google Chrome (Schoology, 2020). It is a learning system with designs similar to Facebook, where teachers and students can communicate in a secure environment where quality instruction occurs.

Vocabulary knowledge

Vocabulary knowledge is knowing the form and meanings of words and can be measured for breadth and depth (Coulter, Robinson, & Charles, 2019; Li & Zhang, 2019). Breadth is the amount of new vocabulary an individual knows and can be assessed by using different methods such as multiple choice and matching activities. On the other hand, depth is the level at which an individual understands a word (Coulter et al., 2019).

CHAPTER 2

LITERATURE REVIEW

This action research aimed to evaluate the effectiveness of explicit vocabulary instruction delivered through Schoology to improve fifth graders' vocabulary knowledge and reading comprehension at an urban elementary school in the southeastern United States. The study investigated the following research questions: 1) How does explicit vocabulary instruction impact students' vocabulary knowledge in online learning modules? 2. How does explicit vocabulary instruction impact students' reading comprehension in online learning modules? 3. What are students' perceptions of explicit vocabulary instruction in online learning modules?

This action research focused on four major concepts: a) reading comprehension, b) explicit vocabulary instruction, c) morphological awareness, and d) context clues. I obtained the information for these variables by conducting research using different databases from the University of South Carolina and Google Scholar. I used the *ERIC, Academic Search Complete*, *Education Source, PsycTests,* and *PsycInfo* databases. To ensure a thorough and effective search, I employed the following steps.

First, I entered critical words associated with my action research. There were times when I used single words such as "vocabulary," and other times I used a combination of keywords. For example, I entered "explicit vocabulary instruction and

reading comprehension" to locate articles on the relationship between reading comprehension and vocabulary instruction. Next, I entered the years and the type of interesting articles. For instance, I entered 2015-2019 or 2016-2020, and I paid close attention to the peer-reviewed academic journals. I then skimmed and screened the articles for the level of relevancy to my study. I further noted the databases where I obtained the articles, the articles' main topics, and the keywords I used. Finally, I saved the full text of these articles to my desktop and into Mendeley, a website that assists with creating reference lists.

This literature review would explain a) reading comprehension, b) explicit vocabulary instruction, c) types of explicit vocabulary instruction, and d) technology integration and explicit vocabulary instruction.

Reading Comprehension

In fifth grade, many students encounter difficulties with reading comprehension (Ritchey, Palombo, Silverman, & Speece, 2017; Wagner & Espin, 2015). Its relationship to vocabulary may be a factor affecting successes in reading comprehension. According to Mokhtari and Nieuderhauser (2013), vocabulary knowledge is a predictor of reading comprehension. After conducting the National Assessment of Education Progress reading assessments, the National Center for Education Statistics (NCES) recognized vocabulary as a vital part of reading comprehension for students at all reading levels (NCES, 2012). This led to vocabulary section being added to the reading assessment conducted on fourth, eighth and 12th graders 2009 and 2011. The results showed a pattern between students' ethnicity and socio-economic factors affecting students' achievement based on

their vocabulary knowledge. Students who scored below the 25th percentile in reading comprehension had a vocabulary score below the proficient scale which was 193.

Many of the students with the low vocabulary and reading comprehension scores were diverse with 33% White, 25% Black and 35% Hispanic, 73% received free or reduced lunch, and 24% spoke English as a second language. On the other hand, students who performed better on reading comprehension and scored in the 75th percentile, with a vocabulary score above 245 in 2011, had a higher percentage of Whites at 72%, with only 7% Black, and 10% Hispanic. Of these ethnic groups, 24% received free and reduced lunch, and 2% spoke English as a second language (NCES, 2012). The ethnicities represented in this data make up most of the fifth-graders at the school where this action research took place. This data also supports the relationship between vocabulary knowledge and reading comprehension and the need for intensive vocabulary instruction.

The first part of this literature review provides (a) definitions of reading and reading comprehension, b) the relationship between vocabulary knowledge and reading comprehension, c) students perceptions of vocabulary knowledge, d) explicit vocabulary Instruction e) comparison of explicit and implicit vocabulary instruction, and f) an explanation of cognitivism as the theoretical framework of explicit vocabulary instruction.

Reading Comprehension

Proponents of reading purported that reading is a skill where students receive and understand it, which plays a very significant role in students learning processes (Muhid, Chalim, Hilaliyah, Budiana, & Wajdi, 2020). In other words, students who are successful

readers understand a wide range of concepts taught in school. Leider et al. (2013) stated that reading comprehension is "the ability to decode, or simply convert graphic information into linguistic form" (p. 1460). It is creating a mental representation of the text in the reader's memory. For reading comprehension to take place, students must understand how learning within the context of instruction aids in their acquisition comprehension skills (Goodwin & Cho, 2016; Kendeou, Muis, & Fulton, 2011). It is not simply decoding words but being able to make connections and understand what is read.

Reading is a complex process which is explained by the Simple View of Reading (SVR); a conceptual framework of reading put forth by Gough and Tunmer (1986). The simple view of reading allows one to decode information, a process which relies on fluency, word recognition accuracy, and listening comprehension. Proponents of the SVR assert that readers success is based on individual performances in decoding and listening comprehension (Hoover & Tunmer, 2018; Lonigan, Burgess, & Schatschneider, 2018).

In order to engage in reading activities, students have to obtain automaticity in their ability to decode words. One study which followed 1, 815 kindergarteners through the third grade, found that fluency and listening comprehension were responsible for 37% of students' reading comprehension in the second grade and 28% in the third grade. Although the importance of fluency ended at the first-grade level, listening comprehension remained a priority across all grade levels. Findings from this study supported validity of the SVR model's impact on reading comprehension. However, it seems to be most effective for students in the lower grades. Another longitudinal study conducted with 701 first-graders revealed a 68% overlap between the effects of decoding and of listening comprehension, which suggests that the SVR is a good model for

classroom literacy attainment (Savage, Burgos, Wood, & Piquette, 2015; Torppa, Georgiou, Lerkkanen, Niemei, Poikkeus, & Nurmi, 2016). These studies were conducted using large population samples, which can be generalized to other students from kindergarten through third grade.

There is no doubt that the SVR provides a valuable framework for reading comprehension, but other studies conducted on the SVR propose complications. For instance, in an effort to explain variances in reading comprehension from Grades 1 through 10, one investigation into the effects of decoding and language factors emphasized the importance of early integration skills to target word knowledge and the structure of text to improve reading comprehension (Foorman, Petscher, & Herrera, 2018). These researchers posited that there is more to reading comprehension than simply being successful at decoding and listening. Researchers found that Kindergarten through third grade, decoding plays a vital role, but listening comprehension, including vocabulary instruction, is more beneficial in upper grades (Braze, Tabor, Shankweiler, & Mencl, 2007; Catts 2018; Lonigan et al., 2018; Ouellette & Beers, 2010). It has been established that vocabulary is a component of reading comprehension and goes beyond decoding and listening comprehension. Many of these studies have focused on lower grades, specifically kindergarten through the third grade, because decoding skills and listening comprehension are foundationals for reading comprehension (Foorman et al., 2018).

The Relationship Between Vocabulary Knowledge and Reading Comprehension

Vocabulary knowledge has a high correlation with reading and is the strongest predictor of reading comprehension (Gallagher et al., 2019; Harmon & Wood, 2018;

Moody et al., 2018; Mokhtari & Nieuderhauser, 2013; National Reading Panel, 2000). As students develop their word reading skills, and widen their language capabilities, vocabulary knowledge plays a vital role in reading comprehension (Foorman et al., 2018; Oslund, Clemens, Simmons, & Simmons, 2018). According to several studies, there is a strong correlation between vocabulary knowledge and reading comprehension (Cunnigham & Stanovich, 1997; Senechal, 2006). However, students in low-income schools, referred to as Title 1 schools, usually enter with limited vocabulary knowledge and tend to perform below average on reading comprehension tests (Nelson et al., 2015). Research has shown that factors affecting the vocabulary knowledge of many students from low-income families include lack of access to books and inexperience with language (Nelson et al., 2015). Therefore, one solution that has shown positive effects is for educators to teach vocabulary explicitly to Title 1 students in order to improve their vocabulary knowledge (Dole, Sloan, & Trathen, 1995; Lubliner & Smetana, 2005; McKeown & Beck, 2004; Tomesen & Aarnoutse, 1998; White, Graves, & Slater, 1990). Since reading becomes more complex and challenging in the intermediate grades (Lesaux, 2006), additional research on the relationship between instruction and vocabulary is needed (Mancilla-Martinez & Lesaux, 2010). Reading comprehension is dependent on the vocabulary knowledge of students. Therefore, consistent explicit instruction of vocabulary knowledge may improve both vocabulary knowledge and reading comprehension in students.

In addition, researchers further demonstrated the strong relationship that existed between vocabulary knowledge and reading comprehension. Lawrence, Hagen, Hwang, Lin, and Lerva (2018) investigated the relationship between knowledge of academic

vocabulary and reading comprehension with 5, 855 middle school students. Data was collected from each student who completed an academic vocabulary assessment, a standardized reading comprehension test, and one of four types of novel vocabulary-depth measures. The findings showed that there was a strong correlation between the performance of students' academic vocabulary measures and reading comprehension.

Another study conducted by Oslund et al. (2018) investigated the differences between struggling and proficient readers using a multi-faceted model of reading comprehension. A total of 796 sixth, seventh, and eighth graders participated in this study, where the main emphasis was on word learning and vocabulary. There were 859 participants from 76 English Language Arts classrooms. The students were from different socio-economic statuses and ethnicities. A total of 67% received free or reduced lunch. Struggling readers were identified as those who scored below the 30th percentile on the Gates MacGinite Reading Tests -Fourth Edition. Wald tests were used to assess word learning and vocabulary knowledge. The findings showed that word learning was a strong predictor for struggling readers, and vocabulary was the strongest for adequate readers. Findings support the critical role of vocabulary in students' reading comprehension. Vocabulary is further seen as important based on the many ways it is embedded throughout the fifth grade South Carolina Career and Ready English Language Arts Standards. One standard suggests that students need to be competent in "analyzing how the author uses words and phrases to shape and clarify meaning" (SC Career Readiness Standard, 5-RI.8.1, 2015). This standard highlights the need for strong knowledge of context clues, which are important explicit vocabulary strategies. Additionally, there is a standard that suggests the need for knowledge of word parts, or

morphological awareness, to determine the meanings of new words. These standard states that students should "use the overall meaning of a text or word's position or function to determine the meaning of a word or phrase" (SC Career& Readiness Standard, 5-RI.9.1, 2015, p.3).

The Simple View of Reading provides a conceptual framework explaining the process of reading and reading comprehension. However, it has been established that students need to do more than simply decoding words and listening to words in order to understand what they read. Research has shown that vocabulary knowledge predicts the reading comprehension of students at different grade levels (Foorman et al., 2018 & Oslund et al., 2018). Studies have shown the strengths of explicit vocabulary instruction in comparison to implicit vocabulary instruction (Gallagher et al., 2019; Mokhtari & Nieuderhauser, 2013; Spencer, Richard, & Yaacov, 2019; Swosinski, 2015).

Explicit Vocabulary Instruction

It has been established that there is a positive relationship between reading comprehension and vocabulary knowledge (Gallagher et al., 2019; Harmon & Wood, 2018; Moody et al., 2018; Mokhtari & Nieuderhauser, 2013). Therefore, using explicit vocabulary instruction may help expand students' vocabulary knowledge. This section focuses on a) the definition of explicit vocabulary instruction, b) comparing explicit and implicit vocabulary instruction, c) choosing academic vocabulary and, d) the theoretical framework of explicit vocabulary instruction.

Definition of Explicit Vocabulary Instruction

Gallagher et al. (2019), and Martin-Sanchez (2019) define explicit vocabulary instruction as the structured and systematic teaching of vocabulary words with direct

instruction in word meanings and word learning strategies. Also, a purpose must be set for learning, telling the students what to do, modeling how to do it, and finally providing guided practice for application of new learning (Kusumawati & Widiati, 2017). Additionally, the National Reading Panel (NRP) defined explicit vocabulary instruction as definitions of key terms, or other characteristics of words to be learned, including the study of word roots or affixes (NRP, 2000). Hence, the importance of intentionally choosing academic vocabulary for effective explicit vocabulary instruction.

Comparison of Implicit and Explicit Vocabulary Instruction

Why should educators teach explicit vocabulary instruction and not implicit vocabulary instruction? While explicit vocabulary instruction is direct teaching of words, implicit vocabulary instruction occurs when the mind is focused on understanding a text or using language to communicate. Implicit vocabulary instruction is the process which occurs naturally without conscious operations or direct teaching. The meanings of unfamiliar words occur incidentally through wide reading, independent of direct instruction or guidance from teachers (Kusumawati & Widiati, 2017; Martin-Sanchez, 2019; Khamesipour, 2015). Also, the National Reading Panel defines implicit vocabulary instruction as indirect instruction, where students gain exposure to new words by reading widely. The assumption is that students will make inferences about unfamiliar words (NRP, 2011).

Researchers of implicit and explicit vocabulary instruction found both to be beneficial for students' attainment of vocabulary knowledge. For instance, one study compared the effects of implicit and explicit vocabulary instruction on the word knowledge of first-graders. Participants were placed in a treatment and a control group. There were 26 first-graders in the treatment group and 27 in the control group. Both

groups were exposed to the same target word, but the treatment group received explicit instruction while the control group received implicit instruction. The results showed that there was no significant difference in the achievements of students who received implicit instruction and those who received explicit instruction (Martin-Sanchez, 2019).

Another study investigated two methods of vocabulary instruction with 30 students, using reading to aid in the development of vocabulary in English learners. The two strategies were explicit vocabulary instruction where words were presented before the reading of the text and implicit vocabulary instruction where instruction occurred through narrow reading. Explicit and implicit vocabulary pre-and post-tests were given, and the results showed that both types of instruction were effective, but the implicit instruction was more efficient than explicit instruction (Khamesipour, 2015). Due to the small number of students in the samples, the results from both studies may raise questions about its ability to generalize to a larger population. However, more studies were conducted to demonstrate the effectiveness of explicit vocabulary instruction.

While advocates of implicit vocabulary instruction encourage a wide range of reading for more vocabulary knowledge, Gallagher et al. (2019) and Shany and Biemiller (2010) found that wide reading was insufficient to increase vocabulary among third- and fourth grade struggling readers, highlighting the importance of explicitly teaching word-learning strategies so that students are able to understand new vocabulary words they encounter incidentally. Otherwise, students may skip unknown words and not learn them. Thus, in order for students to learn words incidentally, they need explicit instruction in word-learning strategies and word consciousness. For instance, empirical studies with similarly diverse populations of either a high Hispanic student body, a high Caucasian

student body or a high African American student body with the inclusion of students with disabilities, were investigated on the effectiveness of explicit vocabulary instruction (Ender, 2016; Myers & Ankrum 2018; Wright & Cervetti, 2017). The studies occurred at elementary and middle school levels. Most of the findings revealed that students benefited from explicit vocabulary instruction. Although both bilingual and monolingual students improved in their knowledge of words explicitly taught, only monolingual students improved in word knowledge by incidental learning. Additionally, findings found that explicit vocabulary instruction, such as teaching explicitly how to infer meanings based on contextual clues and using dictionaries, are more effective for learning (Ender, 2016; Myers & Ankrum, 2018).

Furthermore, researchers engaged in a systematic review of literature to find different vocabulary strategies that would help with improved reading comprehension. This review occurred where researchers searched ERIC using ProQuest interface and the references section to collect the data (Wright & Cervetti, 2017). Qualitative data coding was used to code the age and grade of participants, the length of the instruction per word, types of active processing and types of words taught. The data showed that active engagement of word meanings had a greater impact on reading comprehension gains (Wright & Cervetti, 2017).

Therefore, even though both explicit and implicit vocabulary instruction are beneficial, explicit vocabulary instruction seems to appropriately meet the needs of a more diverse student population. There has been a gap in the literature pertaining to a minimum amount of explicit vocabulary studies being conducted on the fifth-grade level. Few of the studies synthesized in this literature review occurred at the fifth-grade level

because most were conducted with either the lower grades or middle school students. Since explicit vocabulary instruction positively impacted students at other grade levels, the aim of this action research will focus on the effectiveness of explicit vocabulary instruction on reading comprehension in fifth grade to help fill this gap.

Choosing Academic Vocabulary

Academic vocabulary has been defined in two ways: (1) as domain specific academic vocabulary, or the content-specific words used in disciplines like biology, geometry, civics, and geography; or (2) as general academic vocabulary, or the broad terms that appear across subject areas but that may have different meanings (Lane et al., 2019). Graves et al. (2014) suggest that there are three different ways to choose academic word lists: 1) the Word List Approach, 2) the Genre Approach, and 3) the Tier Approach.

First, the Word List Approach was developed by Graves and Sales (2012) and Hiebert (2012). These word lists contained "4,000 of the most frequently occurring word families" (Graves et al., 2014, p.335). According to Biemiller (2009), there are 5,000 root words of which students from kindergarten to sixth grade should learn 40-60%. From the curriculum of national standards, Marzano (2004) developed a list of 7,000 content area words and phrases, which represent 11 subject areas. Furthermore, Coxhead (2000) generated The Academic Word List which contains 570 words based on those which students frequently encounter in college textbooks and professional journals. The most suitable word lists for this current study are the Marzano and Biemiller Word Lists. The Marzano Word Lists main focus are words in the content areas that students encounter on a regular basis. Biemiller Word List provides students with meanings of roots which can be generalized to the meanings of other words with similar roots. Additionally, the

Biemiller Word List is suitable for fifth-graders since it focuses on words for students from kindergarten through sixth grade.

Next, the Genre Approach was introduced by Hierbert and Cervetti (2012) on the basis that students need to understand how to analyze words from both narrative and expository texts since these words are different. These researchers argued that acquiring the meaning of words from informational texts requires discussions, modeling and practicing while narrative texts requires that students understand the ways in which authors use language to ensure that readers understand important features of the story (Hierbert & Cervetti, 2012). This action research is based on explicit vocabulary instruction and its impact on reading comprehension. Therefore, words will be used from the Genre Approach because at the fifth-grade level students engage in wide reading of both expository and narrative texts.

The final relevant word list approach is the Tier Approach which includes three tiers; Tier One, Tier Two and Tier Three (Beck, McKeown, & Kucan 2002, 2008, 2013; Kucan, 2012). Educators are highly encouraged to focus on Tier Two words. Tier Two words are defined as those that have "high utility for mature language users and are found across a variety of domains" examples include "contradict, circumspect, precede, auspicious, fervent, and retrospect" (Beck et al., 2013, p. 9). On the other hand, Tier One words are basic words such as "warm, dog, tired, run, talk, party, swim, look, and so on" (Beck et al., 2013, p. 9). Tier Three words such as "filibuster, pantheon, and epidermis" (Beck et al., 2013, p. 9). are those that are used infrequently and are specific to certain subject areas. All three-word list approaches are beneficial to the population of students in this action research because these words are prevalent in the literature used in the

upper grades. This was acknowledged by Graves et al. (2014), who suggested that these words can be obtained from the texts students use. Graves and colleagues categorized these words into essential words, valuable words, accessible words, and imported words. While essential words are the words students would have to understand in order to comprehend the text, valuable words are words that are able to generalize across both reading and writing. Accessible words are words that are common and not likely to be understood by students with limited vocabulary knowledge. On the other hand, imported words are words that are not included in the text, but help provide students with the schemata to understand and appreciate the concept being taught (Graves et al., 2014).

Many studies conducted on the strengths of explicit vocabulary instruction and its effect on reading comprehension, found that direct vocabulary instruction improves comprehension of the text (Gallagher et al., 2019; Mokhtari & Nieuderhauser, 2013; Spencer et al., 2019; Swosinski, 2015). The populations involved in these studies were diverse with Hispanic, American Hispanic, African American, American Indian, Caucasian, students who received free or reduced lunch, students who were English language learners, and students with reading disabilities. The researchers used measures such as reading comprehension assessments, vocabulary assessments and word recognition assessments. The findings also revealed that even though there was an increase in students' word knowledge and reading comprehension, there were children who had the ability to decode words adequately, but still had major issues with reading comprehension. The findings further indicated that vocabulary knowledge and syntactic awareness play major roles in a student’s ability to improve reading comprehension (Gallagher et al., 2019; Mokhtari & Nieuderhauser, 2013; Spencer et al., 2019;

Swosinski, 2015). Even though these studies emphasized the importance of vocabulary knowledge as a major factor in the reading comprehension of elementary students, most were conducted in the lower grades. This claim was supported by a study conducted by Mokhtari and Nieuderhauser (2013) who proposed the need for further investigation into the relationships between vocabulary and reading comprehension for more or less skilled readers. Therefore, a gap in the literature exists, concerning the effect of explicit vocabulary instruction on reading comprehension in the upper grades.

Cognitivism and Explicit Vocabulary Instruction

Cognitivism, posit that learning involves thinking, and view the memory as an active system that organizes and processes information, with prior knowledge as an important contributor to learning (Moore & Fitz, 1993; Merriam & Caffarella, 1999). It is an appropriate theoretical framework for explicit vocabulary instruction since it offers opportunities for organized instruction by using meaningful organization of content so that learners can make sense of it. It also enhances learners encoding and memory skills using different modes of instruction such as imagery, chunking, relating learning to real-life scenarios, and overlearning (Driscoll, 2005). Additionally, cognitivism allows for self-control of information processing by helping learners connect new information to a subject they are already know (Driscoll, 2005). It offers opportunities for students to actively engage in learning. Wong (1980) found that the use of questions and prompts, assist passive learners to become cognitively engaged which also aid in increased comprehension and retention of content taught.

This section is divided into a) the definition of cognitivism, b) cognitive learning strategies, and c) cognitive learning and explicit vocabulary instruction

Definition of Cognitivism

Cognitive views of learning emerged from the lack of ability of behaviorism to explain the development of complex human abilities such as language (Chomsky, 2006). It views human abilities and their environments as working together for learning to occur (Bruner, 2005). Some of the major works of cognitivism were completed by Edward Chase Tolman, Jean Piaget, Jerome Bruner, and German Gestalt psychologists who investigated mental processes and found that prior knowledge or schema plays an important role in the learning process (Yilmaz, 2011). Piaget (1954) purported that schema (mental images) and memory develop through an ongoing process of assimilation and accommodation. He defined assimilation as 'the incorporation of an external element into a sensorimotor or conceptual scheme' (cited in Gredler, 2001, p. 247), and accommodation as adjusting one's schema based on specific situations' (cited in Gredler, 2001). Learners make sense of new information by making connection to what they already know or revising existing schemas to achieve a sense of balance with the inner and outer worlds.

Cognitive Learning Strategies

Cognitivists suggest that making learning meaningful would help learners connect new information to their prior knowledge (Ertmer & Newby, 1993). This framework provides implications for schema theory when delivering instruction. Educators are encouraged to activate the learners' prior knowledge, use strategies to make learning memorable, and use themes when presenting content to help learners comprehend what is being taught (Yilmaz, 2011). These strategies also include teaching new terms, using graphic organizers, and modeling to help students understand word meaning (Ajayi,

2015). Other strategies include explanations of concepts, examples, non-examples and corrective feedback (Ertmer & Newby, 1993). In today's classroom, students utilize technology for learning which is also a cognitive approach supported by Bruner (2005), who "maintained that the mind connect ways of representing the world from using and relating to the rules of available technology'' (p. X). This allows educators to further scaffold students' learning through direct instruction using media and visuals (Dalton & Grisham 2011).

Cognitive Learning and Explicit Vocabulary Instruction

Explicit vocabulary instruction involves the cognitive domain and require literacy educators to provide opportunities for students to develop cognitive and meta-cognitive skills necessary for understanding unfamiliar words encountered in texts (Carlo, August, and Snow 2010; Nation 2013). O'Malley and Chamot (1990) believed that the best methods for meaningful vocabulary instruction are cognitive learning strategies. Learners are expected to experience five phases of learning vocabulary to enhance their vocabulary knowledge. These phases include locating new words, learning the definition of the word, combine the memory of the word form and meaning, and using the word (Nation, 2016). These procedures support the need for more explicit teaching strategies for vocabulary teaching (Aziz, &Prabha, 2020).

Furthermore, research support the need for morphology to be taught explicitly using a cognitive strategy referred to as "strategic tool reasoning" (Conley, 2008, p. 87). This strategy is demonstrated when students are constructing meanings from unfamiliar words. First, the students should recognize whether they have a deep understanding of the words or not, then they should observe the smaller units of the words to determine

whether they know the meanings and use the word parts to predict the meanings of the words. Finally, students should use the words in meaningful contexts (Conley, 2008). According to Kieffer and Lesaux (2010), educators are responsible for teaching these words explicitly by scaffolding students learning through modeling, providing examples in meaningful contexts, and allowing opportunities for students to practice these unfamiliar words. Eventually, literacy educators, should release the responsibility of learning to the students. The learners' thoughts, beliefs, attitudes, and values are also important to the learning process (Winne, 1985).

In Addition, many students, not only need to hear or see a new vocabulary word, prefix, or root, but for long-term retention, they need to say the word or morpheme aloud, to remember it (Sousa, 2001). Therefore, during explicit instruction teachers should model correct pronunciation, including, dividing the word into smaller word parts or morphemes. The teacher should also use student-friendly definitions and provide exposures in various contexts (Juel & Deffes, 2004). This action research integrated a cognitive framework for explicit vocabulary instruction.

Types of Explicit Vocabulary Instruction

Graves (2016) suggests six strategies for vocabulary instruction in the classroom: 1) morphological awareness, b) using context clues, 3) using a dictionary, 4) dealing with multi-word units, 5) using strategies to discern the meaning of unfamiliar words, and 6) using a personal approach to building vocabulary. This action research concentrated on the first two strategies of explicit vocabulary instruction, which are morphological awareness and using context clues.

Morphological awareness. Morphological awareness is the ability thoughtfully reflect on and interact with the smaller units within words (Apel & Thomas, 2009). The ability to understand and interact with the smaller units of language such as prefixes, suffixes and reflect and manipulate these structures has been shown to have a positive effect on reading (Tong et al., 2011; Wolter & Pike, 2015). Being knowledgeable of root words provides students with the schema necessary to apply logic to new words they encounter with similar roots. Research supports the practice of teaching strategies to analyze word-structure clues such as root words, prefixes, suffixes, Latin or Greek roots (Bauman et al., 2017; Graves, Levesque, Kieffer, & Deacon, 2017; Manyak, Bauman, & Manyak, 2018; Graves, Schneider, & Ringstaff, 2017).

Graves et al. (2017) conducted three trials of a word learning program over a course of one semester. This program was funded by a grant for the U.S. Department of Education. It focused on instruction surrounding word parts, context, and another combined strategy to help students decipher and understand word meaning to help with their reading comprehension. The participants were from fourth-grade, fifth-grade, and middle-grade classrooms. The results demonstrated that when students in the program were taught the different strategies, they were able to apply them in other contexts and to infer the meanings of new words. However, with a combination of the different grade levels, it is challenging to determine whether one grade level performed better than the other. Therefore, this study's goal was to provide information on the performance of fifth- graders in particular.

Another study conducted by Manyak et al. (2018) used 53-mlutiple Morphemic Analysis Assessments to assess students' abilities to decode words and select the

meanings of these words. A project called Vocabulary and Language Assessment (VALE) was implemented in a third-grade classroom. A paired sample t-test was used which showed high pretest-posttest growth. This study examined the morphological awareness of elementary students over a three-year period. A multifaceted comprehensive vocabulary instructional program (MCVIP) was used in fourth and fifth grade classes with diverse student populations. Explicit lessons were used to teach Latin and Greek roots, affixes, and methods of inferring word meanings using a morphological strategy. An evidence-based list of words was also used in this study. The results showed that students were motivated and interested in word learning, and they were able to apply these tools independently. This study supports the claim that morphological awareness helps students understand word meanings.

Morphological Awareness instruction also has an impact on reading comprehension. Memis (2019) conducted a study where a high correlation was found between morphological awareness and reading comprehension. Similar studies revealed that morphological decoding helps students identify words, and in turn, morphological awareness improves reading comprehension. Although pre-teaching vocabulary explicitly helps students, a multifaceted approach is more effective. (Bauman, Edwards, Boland & Olejnik, 2003; Kelley,Lesaux, Kieffer, & Faller, 2010; Taylor, Mraz, Nichols, Rickelman, & Wood, 2009).

Furthermore, the aim of a study conducted by Kelley et al. (2010) was to investigate whether teaching morphological awareness skills would help students independently obtain the cognitive tools required to acquire many words. This study occurred over a period of 18 weeks using words from the Coxhead Academic List (2000),

contained in high interest informational texts from Time for Kids. The findings showed greater gains in vocabulary and reading comprehension for students who participated in the 18-week program. Compared to the classrooms using the district curriculum, students scored better on multiple-choice tests based on academic words from the Coxhead Academic List (2000). Findings also showed that when teachers used the district curriculum, only10 % of instructional time was spent on teaching unfamiliar words to students. The rest of the time was spent on literary analysis. Students also performed better in reading comprehension when vocabulary words are embedded within passages.

Seven schools participated, with teachers chosen by principals based on the student profiles and classroom accomplishments. In the end, twelve teachers implemented the vocabulary program. Comparisons were made with the teachers who continued to use the district curriculum to teach. Due to the findings, it can be concluded that classroom teachers must focus on academic words students are likely to encounter. In addition, more time should be taken to teach vocabulary. These studies reveal the importance of morphological awareness in helping students understand the meanings of unfamiliar terms, thereby highlighting the importance of allotting more time for explicit vocabulary instruction.

Context clues. Using context clues is a strategy where students make inferences to acquire the meanings of unfamiliar words. Explicit word instruction includes contextual analysis and is evident from studies that support teaching people to learn within context can be a highly effective way of improving vocabulary knowledge (Bauman & Edwards, 2007; Bauman et al., 2003; Dowds, Haversack, & Parkinson, 2016; İlter, 2019). Types of context clues include definitions, restatements, antonyms or

contrast, synonyms, and examples or explanations (Dowds et al., 2016; Innaci & Sam, 2017).

Being able to use context clues is an effective word-learning strategy because it can improve children's reading comprehension skills which in turn helps them apply context clues independently. This strategy has been long established as an important strategy for reading comprehension and vocabulary acquisitions (Blachowicz & Fisher, 2000; Dowds et al., 2016; Sáenz & Fuchs, 2002). Having the ability to make meaning from text and to analyze new words is important for children as they learn to read independently and improve their reading comprehension (Dowds et al., 2016; Forbes & Buchanan, 2018). Also, context clues support the constructivist theoretical framework for explicit vocabulary instruction since students collaborate and interact with their teacher and their peers in order to construct meaning from the unfamiliar words.

Tosun (2016) investigated students' perceptions of using context clues and found that vocabulary instruction involves integration, meaningful use, and repetition. Context clues allows for the meaningful use of words. The findings showed that students appreciate actively constructing meaning by applying their knowledge of context clues. Lin (2015) investigated the students' acquisition of vocabulary when the teachers presented them with the meanings and explanations of words. An experimental approach, which incorporated cognitive processes, or models, to aid in the acquisitions of word meanings was used in this study. A concept attainment model was used in the experimental group and a traditional teaching method was used in the control group. A pretest and posttest were used to gather data, and the results revealed a positive correlation between context clues and students' vocabulary attainment.

This action research evaluated the effectiveness of both morphological awareness and context clues as explicit vocabulary instruction strategies. It is vital for these strategies to be introduced at the fifth-grade level because as students approach upper elementary and middle school grades, they are likely to encounter more multisyllabic words. Scholars of literacy have found that explicitly providing instruction of morphological meanings and context clues can provide support for engaging with and comprehending challenging texts (Arnbak & Elbro, 2000; Berninger, Abbott, Nagy, & Carlisle, 2010). Also, many studies focused on morphological awareness as a variable impacting students' acquisition of word meanings, but there is a need for the use of multifaceted methods to learn vocabulary in the upper elementary grades. For this reason, this action research used context clues and morphological awareness as the focus for explicit vocabulary instruction.

Morphological awareness and context clues are two types of explicit vocabulary instruction discussed in this literature review. Morphological awareness focuses on the smaller units of words including suffixes, prefixes, and Latin and Greek roots. Using context clues occurs when students utilize the sentences or phrases surrounding an unfamiliar word to determine its meaning. Both morphological awareness and context clues also support the constructivist approach since students actively engage in learning to construct meaning. Research has shown that both types of instruction assist students with word meaning and have a positive impact on reading comprehension (Arnbak & Elbro, 2000; Berninger et al., 2010). Although there were many studies on morphological awareness and few on context clues, this action research will combine both to determine their impact on reading comprehension.

Technology Integration and Explicit Vocabulary Instruction

In today's classroom, it is becoming more important to integrate technology into daily instruction. Rafool, Sullivan, and Al-Bataineh (2012) noted the importance of integrating modern technologies that are familiar to learners in order to motivate and engage them. This section of the literature review will cover a) technology integration and using Schoology and, b) the impact of technology-based instruction on vocabulary attainment. It is vital to shift from the rote memorization of traditional paper and pencil instruction and, instead, teach vocabulary by integrating appropriate technologies.

According to Wachira and Keengwe (2011), technology integration in education refers to the integration of learning and teaching processes with appropriate technology for the sake of student objectives, including evaluations of what was taught and learning outcomes. Additionally, technology integration is quickly becoming an essential part of k-12 teachers' teaching practices. Empirical research has shown that even though educators have technology skills, they are not equipped to integrate technology into their classrooms (Liu, 2016; Maddux & Cummings, 2004; Moursund & Bielefeldt, 1999). Therefore, the use of technology should be intentional to meet the various needs of learners. Studies conducted on the impact of technology in classrooms revealed that once clear objectives and intentional pedagogical strategies were employed, students learning was positively impacted (Lei & Zhao, 2007; Mouza, 2008). This action research will use Schoology (K-12 Learning Management System Schoology, 2020) to deliver the online vocabulary modules and to evaluate the impact of explicit vocabulary instruction on students' reading comprehension.

Impact of Technology Integration on Explicit Vocabulary Instruction

According to Zou and Lambert (2017), language education is moving toward using more technology tools and strategies with the increase in information technology and the constant use of digital devices in recent years. Using digital technology in the classroom for vocabulary instruction helps personalize instruction based on the students' needs. Technology is not only beneficial to English speakers but also to students who speak English as a second language. Schoology's narration features offer help with pronunciation and translation. Integrating technology with vocabulary instruction also encourages discussion and sharing of ideas in a risk-free environment (Heafner & Massey, 2019; Northrop & Andrei, 2019). Empirical studies have emphasized the importance of personalized learning especially with the new e-learning systems available today (Zou & Xie, 2018; Heafner & Massey, 2019). A study conducted by Zou and Xie (2018) investigated a comprehensive word learning theory with the integration of technology and found that a personalized approach generated the best learning performance.

When technology was integrated, researchers found a positive impact on vocabulary instruction. A study by Huang (2015) used a mixed method approach to investigate the effectiveness of technology integration in the learning and development of vocabulary among 40 second-graders over the course of one semester. There was an experimental group that received the intervention and a control group. The findings showed that, compared to the control group, the students in the experimental group were more engaged in vocabulary activities and performed better on the posttest. The control group showed no change between the pretest and posttest scores. Vygotsky's concept of

scaffolding was employed in this study, and students collaborated with the more experienced members of their learning community in order to construct knowledge. Additionally, action research completed by Low (2017), using Schoology for students to practice English skills, showed an increase in student performance with scores as high as 94.64%.

Furthermore, Lei and Zhao (2007) collected data from a middle school to explore the quantity and quality of technology in use and how it affected students' learning outcomes. The researchers investigated what types of technology students used, how they were used, and which were more effective for student achievement. The findings found that the amount of technology used by students was critical to their learning achievement, especially when these technologies were used effectively. The results showed that when students used technology appropriately for specific subjects where they constructed knowledge, there were improvements in GPA. However, the findings also showed that the most effective technologies were least likely to be used. Further studies into intentionally planning instruction with the appropriate technology could encourage active engagement for solely educational purposes. This study was also conducted in an upper-class area with very little diversity which limits its generalizability, especially for a more diverse student body. This action research will help fill the literature gap in explicit vocabulary instruction delivered through Schoology.

In today's 21st century society, technology is prevalent in most elementary classrooms. Therefore, it is vital for teachers to integrate technology into daily instruction since students are becoming more efficient users of technology. Even though researchers recognize the importance of changes in technology, few studies have been documented

pertaining to the use of new technologies as a means to improve vocabulary (Huang, 2015). This led to the importance of this study's focus on the effectiveness of explicit vocabulary instruction delivered through Schoology on the reading comprehension of fifth-grade students.

Summary

Reading plays an integral part in a student's learning process (Muhid et al., 2020). Studies have shown that vocabulary knowledge is a predictor of reading comprehension, which reinforces the need for explicit vocabulary instruction (Gallagher et al., 2019; Martin-Sanchez, 2019; Mokhtari & Nieuderhauser, 2013). Explicit vocabulary instruction also has a positive effect on student achievement when the appropriate academic vocabulary is chosen as part of the intervention. Academic vocabulary is described as the words that appear across content areas but that may have different meanings because of a particular subject area (Lane et al., 2019). It is imperative for educators to differentiate between these types of vocabulary in order to help students improve their reading comprehension.

This action research focuses on two major types of explicit vocabulary instruction: a) morphological awareness and b) context clues. Morphological awareness allows students to analyze roots such as suffixes, prefixes, and Latin and Greek roots to get a deeper meaning of vocabulary terms, which in turn can improve reading comprehension (Bauman et al., 2017; Graves et al., 2017; Levesque et al., 2017; Manyak et al., 2018). The ability to use context clues will further expand students' vocabulary knowledge by providing them with the opportunity to determine the meanings of unfamiliar words. A cognitivist framework was used in this study since explicit

vocabulary instruction involves the cognitive domain and provides opportunities for students to use their schema to understand new materials taught (Carlo, August, and Snow 2010; Nation 2013).

CHAPTER 3

METHOD

The purpose of this action research was to evaluate the impact that explicit vocabulary instruction through Schoology has on fifth-graders' vocabulary knowledge and reading comprehension at an urban elementary school in the southeastern United States. The following research questions were examined throughout this action research:

Research Questions

1. How does explicit vocabulary instruction impact students' vocabulary knowledge in online learning modules?
2. How does explicit vocabulary instruction impact students' reading comprehension in online learning modules?
3. What are students' perceptions of the explicit vocabulary instruction in online learning modules?

Research Design

An action research approach provided me with the tools and knowledge necessary to conduct this proposed study at an elementary school in the southeastern parts of the United States. According to Burns (2009), action research is a means to bridge the gap between the most effective way of doing things and the actual ways of implementing things.

Action research provides systematic ways by which data can be collected in order that the researcher might make informed decisions about problems that he/she may encounter. In addition, Mills (2014) stated that, when their main goal is to improve their professional practice, action research helps teachers make decisions in their classrooms as they make observations about students' actions and interactions. Stringer (2007) also describes action research as "look, think, act" (p. 8). In other words, after observing, one should think of ways to solve a problem or issue, then act upon it. According to Mertler (2017), action research connects theory to practice, improves educational practice, and empowers teachers to be intellectually engaged. Unlike other traditional research methods, its intent is to improve practices in the classroom by aiding in collaboration among teachers and providing systematic approach to the learning process (Mertler, 2017).

The researcher used a convergent mixed method approach in which both quantitative and qualitative data was collected in a parallel, but separate, manner (Ogilvie & McCrudden, 2017), in order to answer the research questions of this study. A convergent parallel design ensured that the researcher concurrently, analyze and interpret the quantitative and qualitative data gathered from the study (Demir & Pismek, 2018).

Students completed vocabulary and comprehension pretests and posttests to evaluate the effectiveness of explicit vocabulary instruction in improving vocabulary and reading comprehension scores. A survey was used to gather data about students' perceptions about the intervention. Students participated in a semi-structured interview after the intervention which provided more data on their perceptions of the explicit vocabulary instruction delivered through Schoology.

Setting and Participants

Setting

This study took place in the researcher's fifth-grade classroom at an urban elementary school located in the southeastern United States. This is a Title 1 school with a high poverty rate and has high transient and homelessness populations. This was the third year of operation for this institution which was formed when two Title 1 schools combined. It contains a total of 721 students enrolled, with 54% African American, 23% Caucasian, 16% Hispanic, and 7% Other.

At the time of this study, my fifth-grade English Language Arts class of 33 fifth-graders; comprised of 18 boys and 15 girls, all from different ethnicities; Caucasian, Hispanic, and African American. There were eight students who received help from the resource teacher and three students who were English-language learners (ELL) and received ELL services. Additionally, three students participated in the gifted and talented program, two students had 504 Plans, and one student received mental health services. As Spartanburg District 7 has a one-to-one technology per student ratio upon enrollment in a District 7 school, each student had a personal device. Additionally, at the front of the classroom, an Active Panel was available for integrating technology throughout daily instruction. Due to COVID pandemic protocols desks were arranged in rows.

Schoology was the learning management system used in the classroom. As a cloud-based platform, it was accessible via the internet and compatible with Firefox, Internet Explorer, Safari, and Google Chrome. This learning platform is used by millions of users from different K-12 schools and universities around the world in today's

classrooms (Sarrab, Elbasir, & Alnaeli, 2016). Students in fifth grade used Schoology to take quizzes and tests, as well access different websites via links for research purposes.

Participants

A purposive sampling method was used to identify the participants in this study, which means that my sampling of the students was based on careful consideration of the individuals that would provide a good source of data for this action research topic (Galvan & Galvan, 2017). The participants in this study consisted of 25 fifth graders between the ages of 10 and 11, all from diverse backgrounds with 32% Hispanic students, 48% African American, 12 % Multi-racial, 48 % females, and 52 % males. For the semi-structured interview, maximum variation sampling was used to select 14 of the 25 participants. Based on the iReady Reading assessment conducted at the beginning of September 2020, most participants were below grade level in vocabulary and reading comprehension. iReady is a personalized, research-based reading instruction program that has been shown to support students of all skill levels (Cunningham & Reutzel, 2019).

The iReady Reading assessment showed that only 6% of the participants were on a fifth-grade level in reading comprehension, with 82% scoring below grade level. Additionally, 97% of the students tested below grade level on the vocabulary component of iReady, with only 3% scoring on grade level. The reading and vocabulary levels ranged from kindergarten through fifth grade, with most students on a third-grade level. In order to be considered for participation in the proposed action study, students had to be a) enrolled at the site of the study, b) taking a fifth-grade English Language Arts class, and c) had scored at a third-grade reading level or higher on the 2020 iReady Reading Assessment.

Each student had a personal MacBook to use and was familiar with Schoology as the learning management system at the study site. However, they lacked exposure to the many features and applications utilized in Schoology for learning. Although students in the classroom sat in rows approximately six feet apart, due to the COVID-19 situation, they were able to engage in written and oral group discussions using Schoology's innovative discussion feature.

Intervention

The intervention of this action research was explicit vocabulary instruction delivered through Schoology modules. These modules were delivered to students over a period of five weeks, for 15–20 minutes each weekday. Over the course of the intervention period, twenty-five new vocabulary terms were presented to students. The vocabulary modules employed many of Schoology's multimedia features, which included the media album, discussion forums, microphone, and highlighting tool. These elements supported the best practices for explicit vocabulary instruction, encouraging collaboration among peers, demonstrating the separation of separating affixes from base words, activating background knowledge, and illustrating word meanings (Alamari & Rogers, 2018; Mayer, 2005, 2009; Zhao & Li, 2018). This section covered the following topics: a) prior knowledge about explicit vocabulary instruction, b) a description of the vocabulary modules in Schoology, c) a table showing the organization of the modules, and d) an explanation of each week's modules.

Description of Weekly Online Vocabulary Modules

During the first week of the intervention, participants were chosen for the completion of the vocabulary and reading comprehension pretests. I demonstrated and

modeled the process of accessing the online modules in Schoology. The vocabulary modules were organized in folders labeled by week. For example, the first folder was labeled "Week 1," "Week 2," and so on for five weeks. Within each folder, the materials, and activities for each of the five weekdays were organized by date. The purpose of this organization structure is to guide the participants to navigate the modules successfully. The vocabulary modules were based on the South Carolina Career and Readiness English Language Arts Standards to help drive instruction. These modules aligned with the following state standards:

- 5-RL.10.6 Acquire and use general academic and domain-specific words and phrases that signal contrast, addition, and logical relationships; demonstrate an understanding of nuances and jargon.
- 5-RI.9.1 Use the overall meaning of a text or word's position or function to determine the meaning of a word or phrase.

Vocabulary Instruction Weeks 1-5

Each week of the intervention consisted of five daily lessons. These lessons were organized using the cognitivist strategies which include teaching words explicitly by scaffolding students learning through modeling, providing examples in meaningful contexts, and allowing opportunities for students to practice these unfamiliar words (Kieffer & Lesaux, 2010). As shown in Table 3.2, days 1–5 each addressed one of the different vocabulary strategies that was considered as to be best practices for explicit vocabulary instruction. Cognitive theorists highlighted the need for explicit vocabulary instruction that model correct pronunciation, including, dividing the word into smaller word parts or morphemes (Sousa, 2001). Each week's modules covered a different set of

vocabulary terms, integrating different Schoology features to assist students in understanding the definitions of these unfamiliar terms. Each day of the week employed different strategies to aid in students understanding of word meanings.

Day 1: Introduction of vocabulary terms. For effective vocabulary instruction, an educator must have a purpose in mind (Kusumawati & Widiati, 2017). On the first Day, I activated students' background knowledge by first introducing the new terms in accordance with Table 3.2. The participants used a picture representation of each new vocabulary term (which was uploaded into the media album), to assist them with understanding the definitions. Shen (2010) stated that the use of image-based strategies where pictures are used to elicit images in learners' minds were effective when teaching new vocabulary terms. This was further supported by major works of cognitivism were completed by Edward Chase Tolman, Jean Piaget, Jerome Bruner, and German Gestalt psychologists who investigated mental processes and found that prior knowledge or schema plays an important role in the learning process ((Yilmaz, 2011). The media album feature of Schoology provides participants with the opportunity to visualize new vocabulary terms since it will contain pictures representing the new words.

Day 2: Morphological awareness. On the second day of each week, students focused on morphological awareness because studies have shown that understanding the smaller units of words such as prefixes, suffixes, and roots has a positive effect on vocabulary acquisition and reading comprehension (Tong et al., 2011; Wolter & Pike, 2015). These roots provided students with the schema necessary to acquire the meanings of new vocabulary terms. Piaget (1954) purported that schema (mental images) and memory develop through an ongoing process of assimilation and accommodation, where

learners make sense of new information by making connection to what they already know or revising existing schemas to achieve a sense of balance with the inner and outer worlds. Participants viewed a three-minute video clip that explained the prefixes, suffixes, and roots of specific words. Because morphological awareness is the ability to understand and interact with the smaller units of language to reflect and manipulate these structures, research has a positive effect on reading comprehension (Tong et al., 2011; Wolter & Pike, 2015). The participants used the microphone feature to pronounce each word correctly before submitting their responses. Then the students completed a matching activity that assessed their understanding of the morphological structures of the words.

Day 3: Application of morphological awareness. On the third day of each week, students delved deeper into morphological awareness by applying their understanding of the new words to locate other words with similar patterns. These strategies are supported by Nation (2016), who stated that locating new words, learning the definition of the words, combining the memory of the word form and meaning, and using the word are effective ways to teach vocabulary. The students had the opportunity to apply Day 2's morphological lessons to new words with similar roots, thus increasing their vocabulary knowledge (Bauman et al., 2017; Graves, Levesque et al., 2017; Graves et al., 2017; Manyak et al., 2018). The mini-lessons were short videos with the new words where the teacher scaffolded students as they analyze word parts. In the lesson, students obtained opportunities to pronounce the words, and provide examples of other words with similar roots. The students used website links to dictionaries and thesauruses in order to locate words with similar roots, which they recorded in the discussion box.

Day 4: Types of context clues. Each week, the researcher introduced different types of context clues (see Table 3.1) through a five-minute video, in which the researcher explained, and modeled how to apply these skills effectively. According to Collins, Wolter, Meaux, and Alonzo (2020), students are better able to understand the meanings of words when words are encountered in authentic text and used in context.

Table 3. 1
Schedule of the Context Clues Lessons

Weeks	Types of Context Clues
Week 1	Definition and Synonyms
Week 2	Antonyms or Contrast
Week 3	Examples
Week 4	Inferences
Week 5	Cumulative Review of Context Clues

Throughout the intervention, students used their knowledge of context clues to determine the unfamiliar definitions. Using context clues around the unfamiliar word or phrase has been established as a significant strategy for reading comprehension and vocabulary acquisition (Blachowicz & Fisher, 2000; Dowds et al., 2016; Sáenz & Fuchs, 2002). The students were provided with the opportunity to practice different examples to show their understanding of context clues. The highlighting features found in the assessment tool bar were used by the students to focus their attention on the surrounding clues. Kieffer and Lesaux (2010), stated that educators are responsible for providing examples in meaningful contexts, and allowing opportunities for students to practice

these unfamiliar words. Students used context clues to ensure their understanding of the module's vocabulary.

Day 5: Assessment of vocabulary knowledge. On the fifth day of each week, I assessed participants' understanding of the words learned. The students showed their understanding of the week's vocabulary by completing weekly assessments in Schoology. These assessments contained multiple choice, cloze sentence, and matching questions. Dixson and Worrell (2016) and Grannan and Calkins (2018) stated that formative assessments help educators diagnose student difficulties and provide corrective feedback (Ertmer & Newby, 1993) that can promote a positive change in student learning.

Table 3.2
Outline of Weekly Vocabulary Modules in Schoology

Days	Vocabulary Strategies	Activities	Schoology Features
Day 1	Introduction of Vocabulary Terms	View picture representations	Media album Microphone Discussion
Day 2	Morphological Awareness	Learn about suffixes, prefixes, and Roots	Matching tool Inserting content tool Microphone
Day 3	Application of Morphological Awareness	Locate other examples of suffixes, prefixes, or roots Review picture representations	Link feature Media album
Day 4	Types of Context Clues	Define or restate terms Find synonyms antonyms or contrast Example or explanation	Inserting content feature Highlighting tool Discussion feature
Day 5	Assessment of Vocabulary Knowledge	Complete cloze sentences Multiple Choice	Highlighting tool Assessment tools

Data Collection

For this action research, I used four instruments to collect data. To collect quantitative data, I used vocabulary pre- and posttests, pre- and posttests on reading comprehension and a student perception survey. In order to collect qualitative data, I conducted semi-structured interviews. Table 3.2 displays the alignment of the research questions and their data sources. Each data source is explained in detail in this section.

Table 3.3
Alignment Between Research Questions and Data Sources

Research Questions	Data Sources
1. How does explicit vocabulary instruction impact students' vocabulary knowledge in online learning modules?	• Pre and Posttest assessment: Vocabulary
2. How does explicit vocabulary instruction impact students' reading comprehension in online learning modules?	• Pre and Posttest assessment: Reading comprehension
3. What are students' perceptions of the explicit vocabulary instruction in online learning modules?	• Student perception survey • Semi-structured interview

Quantitative Data Collection Methods

In this action research, quantitative data were collected and analyzed through the use of vocabulary pre and posttests, reading comprehension pre and posttests, and a student perception survey.

Vocabulary Pretest and Posttest

The researcher used a vocabulary assessment from the fifth-grade Houghton Mifflin Harcourt Journeys Reading program (Journeys, 2011) to gather data about students' vocabulary knowledge. This vocabulary assessment derived from the benchmark assessments of the Journeys Reading program found in units 2 and 6 of

Houghton Mifflin Harcourt (Journeys, 2011). Since few studies were conducted to verify the internal consistency of these items, the internal consistency of both the vocabulary pre and posttests were tested using Cronbach alpha. The overall Cronbach's alpha value for the pretest was 0.78 and 0.84 for the posttest. For 25 multiple choice questions, the vocabulary terms were taken from three nonfiction passages and three fiction passages. The main emphasis of these questions was on morphological awareness and context clues (see Table 3.4).

Table 3. 4
Alignment of Vocabulary Questions and Subscales

Subscales	Items
Morphological Awareness	19,22,24,29,30, 31, 32, 39, 42, 47, 48
Context Clues	2,4,6,8,10,12, 15,18,23,34,36, 37,40, 44,

These assessment questions contained prefixes, suffixes, Latin, and Greek roots and an assortment of vocabulary used with context clues. Research has suggested that these types of vocabulary are effective for improving students' knowledge of unfamiliar words (Bauman et al., 2017; Graves, et al., 2017; Manyak et al., 2018;).These questions focused on some of the most common prefixes, such as -pro, -pre, and –re; suffixes, -ist, -ment, -ness and less, and roots from Latin and Greek, such as -aud, -trans -tele, -photo, -graph, and -port. The maximum point value for the vocabulary assessment was 25 points (i.e., one point for each item).

The vocabulary content was validated by the reading specialist at the site of the study, who was knowledgeable of literacy instruction. Mertler (2017) stated that validity

is primarily concerned with whether or not the instrument, in this case, the test, measured what it was meant to measure.

The questions on this assessment aligned with the SC Career and Readiness Standards for fifth grade, which state:

- 5-RL.10.6 Acquire and use general academic and domain-specific words and phrases that signal contrast, addition, and logical relationships; demonstrate an understanding of nuances and jargon.
- 5-RI.9.1 Use the overall meaning of a text or word's position or function to determine the meaning of a word or phrase.

Reading Comprehension Pretest and Posttest

The researcher used a reading comprehension assessment from units 2 and 6 of the fifth-grade Houghton Mifflin Harcourt Journeys Reading program (Journeys, 2011) to gather data about students' reading comprehension. This reading program was adapted by the school district to be used by the elementary students at the site of the study, for reading instruction. Journeys is a comprehensive, research-based K-6 English Language Arts program that provides instruction in reading, speaking, listening, and writing (Houghton Mifflin Harcourt, 2020). The comprehension assessment questions were drawn from the same fiction and nonfiction passages as the vocabulary assessment. There were 23 multiple choice questions, each with one point, and students used their knowledge of prefixes, suffixes, and Latin and Greek roots to construct meaning from the passages.

To ensure the validity of the reading comprehension pretests and posttests for this action research, I aligned the vocabulary terms present in the reading comprehension

passages and collaborated with the reading specialist to critically examine and determine that the pretest and posttest measured what they were intended to measure. Cronbach's alpha was used to determine the reliability of both the reading comprehension and vocabulary pre and posttest tests. According to Mertler (2017), reliability refers to the consistent nature of the data collected where the instrument used is expected to give the same outcome when repeated. The values of the tests' coefficients for reading comprehension were 0.80 for the pretest and 0. 78 for the posttest.

Researchers have found that there is a positive relationship between the learning gains and the level of implementation when the Journeys Reading Program used consistently (Resendez & Azin, 2012). Compared to students whose teachers rarely used the program, the teachers who used the program consistently showed high levels of gains in both vocabulary knowledge and reading comprehension (Resendez & Azin, 2012).

Student Perception Survey

I utilized the Perceived Usefulness subscale of a *Technology* Acceptance Questionnaire (Hwang, Yang, & Wang, 2013) to gather information about students' perceptions of the effectiveness of the online vocabulary modules on their vocabulary knowledge. This instrument was suitable for this study since it was originally designed to measure students' perception of technology use at the fifth-grade level. As shown in Table 3.2, the original questionnaire consisted of 13 items, six of which focused on the perceived usefulness of using technology for learning. This questionnaire was modified into a short survey to fit the current setting of this study (see Appendix F). Care was taken to change as little of the original items as possible. For example, one original item stated, "The learning approach enriched the learning activity." In the modified version for

the proposed study, this item now reads, “The online vocabulary modules enriched my vocabulary knowledge.” The survey is rated on a 6-point Likert scale, ranging from strongly disagree (1) to strongly agree (6).

The original questionnaire was reliable since the Cronbach’s alpha values were between 0.94 and 0.95 (Hwang, Sung, Hung, Huang, & Tsai, 2012). Due to the modifications that were made to items, the internal consistency of the modified survey was tested using Cronbach alpha, which had a value of 0.90.

Qualitative Data Collection Methods

In this action research, I also collected and analyzed qualitative data from semi-structured interviews which were conducted with fourteen of the participants.

Semi-structured Interview Protocol

This study used semi-structured interviews to collect data regarding students’ perceptions of the effectiveness of explicit vocabulary instruction online. First-hand accounts of the students’ experiences are one of the most important sources of qualitative data (Hammersley & Atkinson, 1995). According to Brown and Danaher (2019), semi-structured interviews are those where the interviewer prepares open-ended questions that allow for the development of deeper conversations.

An interview protocol consisting of five questions were used for the interviews. These questions were formulated based on Brown and Concannon’s (2016) research on student perceptions of vocabulary knowledge. Brown and Concannon (2016) found that prompting students to answer questions about their perceptions of vocabulary knowledge allows them to think critically about “what they already know, and what they will learn and could contribute to the development of understanding of new vocabulary terms” (p.

397). Questions for the interview were also adapted from an instrument used by Silverman, Kim Hartranft, Nunn and McNeish (2017) to investigate teachers' perceptions of vocabulary and reading comprehension, which is similar to Research Question 3 of this action research. The original questions were slightly modified to align with this current study (see Appendix G). For example, one of the original survey questions asked, "What were the strengths of the program?" The modified interview question asked, "What were the strengths of using the online vocabulary modules?"

These interviews were conducted individually with purposive sample of fourteen participants. Interviews took place in the mornings before school since most students attend by 7:00 a.m. and must wait until 7:30 a.m. to enter the classroom. These interviews took place individually after each student completed the entire online vocabulary modules intervention, during the last week of the implementation process, and were digitally recorded with Apple's Voice Memos App.

Data Analysis

Both quantitative and qualitative data were analyzed in an effort to answer the research questions (see Table 3.5). Table 3.3 showed the alignment between the research questions, data collection methods, and the types of data analysis used in this action research. For the vocabulary and comprehension pretests and posttests, and the student perception survey, I used both descriptive and inferential statistics during the analysis phase. I utilized an inductive thematic approach (Creswell, 2017) to analyze qualitative data from the student interviews.

Table 3.5

Research Questions, Data Sources, and Data Analysis

Research questions	Data sources	Data analysis
RQ1. How does explicit vocabulary instruction impact students' vocabulary knowledge in online learning modules?	• Pretest / Posttest	Descriptive statistics Inferential statistics: Paired sample t-test
RQ2. How does explicit vocabulary instruction impact students' reading comprehension in online learning modules?	• Pretest / Posttest	Descriptive statistics Inferential statistics: Paired sample t-test
RQ3. What are students' perceptions of the explicit vocabulary instruction in online learning modules?	• Semi-Structured Interview • Questionnaire	Inductive analysis Descriptive statistics

Quantitative Analysis

Descriptive statistics and inferential statistics (Creswell, 2014) were used to analyze quantitative data with the JASP statistics software. The mean and standard deviation were the descriptive statistics used to compare students' averages on the vocabulary and reading comprehension pretest and posttest. It was also used to analyze students' responses to the survey about their perceptions towards explicit vocabulary online modules.

Additionally, a paired sample t-test was conducted to investigate the differences between the mean vocabulary and comprehension pretest scores and the mean vocabulary and comprehension posttests scores. Furthermore, the Cohen's d was used to calculate the effect sizes of the reading comprehension pretest and posttest, and the vocabulary pretest and posttest.

Qualitative Analysis

Transcripts of the semi-structured interviews were analyzed individually with an inductive approach. Using the software tool, *Delve*, was utilized to code the data to identify categories and themes. The inductive analysis approach generates rich thematic analyses, giving preference to participants' perceptions (Casio, Lee, Vaudrin, & Freedman, 2019). Coding patterns were identified, and similar information was grouped to form categories. Creswell (2018) stated that coding is vital to qualitative research because it helps make sense of the data collected from interviews. The recorded audio files were transcribed using the software NVivo. The transcripts were cleaned up by the researcher by listening to each audio to ensure correct transcription by NVivo and making necessary corrections in Microsoft Word. The transcripts were read and reread by the researcher four times, to get an understanding of the information provided and reflect on its meaning (Creswell & Creswell, 2018). The researcher then used the inductive approach to code the data which were then used to develop categories and themes (see Table 3.5 above).

Procedures and Timeline

As shown in Table 3.6, the procedures and timeline of this action research were divided into phases. In Phase 1, the participants were identified. In Phase 2, the implementation of the vocabulary and reading comprehension pretests occurred. Collecting data took place in Phase 3 and analyzing data, in Phase 4. Below is an outline and explanation of the procedures for each phase in this action research.

Table 3. 6
Phase, Expectations, and Time Frame

Phase	Expectations	Time Frame
Phase 1: Identifying Participants	• Contact Parents • Send home consent forms • Identify participants • Provide students with assent forms • Review consent and assent forms	1 week
Phase 2: Collecting Data	• Conduct the vocabulary pretest • Conduct the reading comprehension pretest • Collect student questionnaire responses • Hold semi-structured interviews • Conduct vocabulary posttest • Conduct reading comprehension posttest	1 week 5 weeks
Phase 3: Analyzing Data	• Conduct a paired sample t-test for vocabulary pretest and posttest • Conduct a paired sample t-test for reading comprehension pretest and posttest • Analyze survey responses • Transcribe and analyze semi-structured interview data	3 weeks

Phase 1

In this phase, participants (i.e., fifth-grade students) were identified for the study. The researcher contacted parents and explained the nature of the study via ClassTag, a communication app. The researcher notified parents that students would bring home a consent form containing additional information about the study (see Appendix B). After receiving the completed consent forms, the researcher gave assent forms to the students whose parents allowed them to participate in the study (see Appendix C). Afterwards, permission was obtained from district leaders and the principal regarding the nature of

the study (see Appendix A). The researcher reviewed the consent and assent forms for signatures and began the study.

Phase 2

Three data sources were collected for this study. These data sources were a) the vocabulary and comprehension pretests and posttests, b) the student perception questionnaire, and c) the semi-structured interview.

Vocabulary and comprehension pretest and posttest

At the commencement and conclusions of the study, the participants completed a 60-minute pretest and posttest. The vocabulary pretest consisted of 25 questions (14 context clues and 11 morphological awareness), and the reading comprehension pretest consisted of 23 questions. The participants read the reading comprehension passages then answered the questions. Participants accessed the pretest and posttest via Schoology, and the data were automatically stored in the gradebook.

Student perception survey

In order to collect data on participants' perceptions of the impact explicit vocabulary instruction on their vocabulary knowledge and reading comprehension, the researcher used a student perception survey modified from the Perceived Usefulness section of a Technology Acceptance Questionnaire (Hwang et al., 2013). This modified survey consisted of 6 questions on a 6-point Likert scale and was uploaded in Schoology at the end of the intervention for participants to complete.

Semi-structured interviews

The semi-structured interviews occurred individually with 12 participants, and each lasted for 5–10 minutes. The criteria for selection for the interview was based on

students' performance on the posttest. Students who scored 80% and above on both the vocabulary and reading comprehension posttests were considered high performers, those who scored 70 to 79%, were middle performers, and low performers scored from 69% and below.

The interview protocol had five questions to obtain a better understanding about the participants' perceptions of the online vocabulary modules effectiveness. These semi-structured interviews transpired at the end of the intervention after participants' completion of the student perception surveys.

Phase 3

At the end of the five-week implementation process, the researcher conducted a paired sample t-test of the vocabulary and reading comprehension pretests and posttests using JASP Statistics software. The researcher also analyzed the data from the modified Perceived Usefulness section of a Technology Acceptance Questionnaire (Hwang et al., 2013). The open-ended data from the semi-structured interviews were transcribed using NVivo, and then Delve, a transcription tool for qualitative data was used to create codes. These codes led to the development of categories and themes.

Rigor and Trustworthiness

Triangulation, thick, rich description, an audit trail, and peer debriefing were used to ensure rigorous and trustworthy qualitative data collection in this action research. Each method is described below.

Triangulation

The main goal of triangulation was to pull together different data points in order to promote rigor, develop a deeper meaning, and gain a more complete picture of the

topic being investigated (O'Cathan, Murphy, & Nicholl, 2010). In summary, triangulation is "the validating potential" (Padgett, Mathew, & Conte, 2004, p. 226) of using different types of data to capture the same phenomenon, and this study used semi-structured interviews and a researcher log, that added to the credibility of the qualitative findings.

Thick, Rich Description

According to Shenton (2004), detailed description will help with credibility of the information gathered and determine the extent to which the data "ring true" (p. 69). Thick, rich description was another qualitative method which ensured rigor and trustworthiness. Collecting quality data from participants allowed for a rich description of the findings. Many examples of quotes from the participants' semi-structured interviews were used to support their perceptions of the explicit vocabulary online modules.

Audit Trail

In addition to rich description, the audit trail promoted rigor and trustworthiness of the data collected. Bowen (2009) stated that an audit trail is a systematic way of recording the implementation process of a study as data is gathered. The researcher maintained a log of the study's implementation. In this log, the researcher documented the data collection and analysis procedures.

Peer Debriefing

Peer debriefing with the dissertation occurred throughout the coding phase to encourage rigor of the study. Mertler (2017) defined peer debriefing as the act of engaging in academic discussions using other professionals who can help review and critique the process of processes of data collection, analysis, and interpretation. For

instance, my dissertation chair asked pointed questions to aid in my thinking of meaningful pattern and first cycle codes. He also questioned me about the reasons for choosing the categories and encouraged me to reflect on my research questions. In summary, the dissertation chair guided with reviewing the data collection process, analysis of data, and interpretation of data to ensure its overall credibility.

Plan for Sharing and Communicating Findings

According to Mertler (2016) communicating results added credibility to the process of conducting action research because it provided teachers and other educators information from a practitioner's standpoint. For this reason, my action research was shared locally at the site of the study and at the district level.

The researcher shared the purpose of the study, the methodology, the results and conclusions, the action plan, and research questions with the students, fifth-grade colleagues, and the staff at the school, via a PowerPoint presentation. To the students, the researcher shared the comparisons between the vocabulary and reading comprehension pretest and posttest scores using simplified terminologies. The explicit vocabulary modules and samples of work completed by students in Schoology were viewed during the presentation. At the end of the presentation, students asked questions about the study, which were answered by the researcher.

At the site of the study, teachers attend grade-level meetings where we collaborate, plan for instruction, and share ideas for student improvement. During one of these meetings, I shared findings of the results of my in a format similar to the one presented to the students. I explained how the research informed my teaching in an effort to improve my colleagues' pedagogy. There were handouts available for the teachers to

critically analyze the data to understand the effect that the explicit vocabulary instruction had on the reading comprehension scores of fifth graders. My colleagues had the opportunity to provide feedback and suggestions on this study.

In addition, after I received permission from the principal, I shared the findings at one of our faculty meetings as it is imperative for the results to be shared with as many of my colleagues, from kindergarten to fifth grade, so that we might all deliver vocabulary and reading instruction more efficiently to our students. Teachers had opportunities to share any suggestions for building upon the study. As stated by Twine, Kahn, and Hundt (2017), participating in collaborative discussions about research can help make research more relevant to the needs of the participants.

Finally, I submitted a proposal to share my findings at the Association for Educational Communications and Technology (AECT) in October 2022. To protect the privacy of students' personal information and ensure the confidentiality of my participants and the school, I used pseudonyms and limited the setting descriptions (Mertler, 2016). For example, instead of using the actual name of the school, I referred to it as a Title 1 elementary school in the southeastern United States. However, the data presented were actual findings without any falsifications.

CHAPTER 4

ANALYSIS AND FINDINGS

The purpose of this research was to evaluate the implementation of explicit vocabulary instruction delivered through Schoology as a way to improve fifth graders' vocabulary knowledge and reading comprehension at an urban elementary school in the southeastern United States. The findings from this study should bring awareness to teachers of the importance of using different learning strategies like using context clues and morphological structure to explicitly teach new vocabulary. This chapter provides analyses from both quantitative and qualitative data. The quantitative data came from reading comprehension and vocabulary pretests and posttests and a survey gauging students' perception of usefulness section. The qualitative findings were derived from semi-structured interviews regarding students' perceptions about the online vocabulary modules. The study focused on the following research questions to guide the data collection process: a) How does explicit vocabulary instruction impact students' vocabulary knowledge in online learning modules? b) How does explicit vocabulary instruction impact students' reading comprehension in online learning modules? c) What are students' perceptions of the explicit vocabulary instruction in online learning modules?

The first section of this chapter provides the quantitative findings of the reading comprehension and vocabulary pretests and posttests, as well as results from the student perception survey. The second section provides qualitative findings from the semi-structured interview data.

Quantitative Findings

Reading Comprehension Pre and Posttests

A reading comprehension pretest and posttest were conducted at the commencement and culmination of this study. The reading comprehension test consisted of 23 multiple choice questions, with each correct answer receiving a point value of one. Descriptive and inferential statistics denoting students' performance were used in reporting the findings. Cronbach's Alpha test was included to ensure internal reliability of the tests. For reference, only results with "values greater than 0.7 were considered acceptable" (Trundell, et al., 2020, p. 5). The values of the tests' coefficients were 0.80 for the pretest and 0. 78 for the posttest, which clearly confirmed that they were acceptable.

Descriptive statistics for reading comprehension pretest and posttests. The reading comprehension pre and posttest were used to calculate descriptive statistics of student scores (see Table 4.1). The mean score of the pretest (M = 44.64, SD = 20.78) was lower than the mean score of the posttest (M = 62.12, SD = 19.40). The standard deviations were large due to outliers on both the reading comprehension pretest and posttests.

Table 4.1
Mean and Standard Deviation of Reading Comprehension Pretest and Posttest Data

	N	M	SD
Pretest	25	44.64	20.78
Posttest	25	62.12	19.40

Note. SD =Standard Deviation

Inferential statistics for reading comprehension pretest and posttests. To examine whether the data met the normality assumption, the Shapiro-Wilk test was performed, and the result showed that there was no deviation of normality. A paired samples t-test in JASP was conducted to compare the mean scores of the reading comprehension pretests and posttests. The results showed that there was a statistically significant difference in the mean scores between the pretest (M = 44.64, SD = 20.78) and posttest (M = 62.12, SD = 19.40), t(24) = 5.17, p = 0.001, Cohen's d =1.03. This indicated a large effect size (Cohen, 1988).

Table 4.2
Inferential Statistics of the Effective Size and P Value of the Reading Comprehension Pretest and Posttest

Measure 1	Measure 2	t	df	p	Cohen's d
Reading Comprehension Pretest	Reading Comprehension Posttest	5.17	24	.001	1.03

Vocabulary Pre and Posttest

Vocabulary pretest and posttest questions were based on the same reading comprehension passages used for the reading comprehension pretest and posttest. Each vocabulary test consisted of 14 context clues questions and 11 questions about words with differing morphological structures for a total of 25 multiple choice questions. Each correct answer was worth one point.

The internal consistency of both the vocabulary pre and posttests was tested using Cronbach alpha. One item was removed during the reliability test for the vocabulary posttest because all the students answered it correctly. The alpha values for the pretest were 0.78 and 0.84 for the posttest. Furthermore, the Cronbach's alpha for the context clues pretest subscale was 0.71 and 0.77 for the posttest. The Cronbach's alpha for the morphology awareness pretest subscale was 0.67 and the posttest had a value of 0.69. One question was dropped from the reliability testing of the morphology posttest because all the students answered it correctly (see Table 4.3).

Table 4. 3
Cronbach's Alpha for Pretest and Posttests for Subscales; Context Clues, Morphology

	Cronbach's Alpha
Context Clues Pretest	.71
Context Clues Posttest	.77
Morphology Pretest	.67
Morphology Posttest	.69

Descriptive statistics for vocabulary pretest and posttests

In terms of vocabulary knowledge, students' scores increased significantly on the post-tests to those of the pretests. Table 4.4 contains descriptive statistics for the vocabulary pretest and post-test and the context clues and morphology awareness subscales. In addition, students also showed significant increase on the vocabulary posttest (M = 70, SD= 18.83) compared to the pretest (M=52.48, SD = 19.02). On the other hand, the mean score of the context clues subscale post-test (M=74.64, SD=20.12) was significantly higher than the mean score of the pretest (M =54.92, SD = 21.89). The

standard deviations of the context clues pretest and post-tests were large due to outliers of students' scores. In addition, the morphological awareness subscale post-test had the mean score (*M* =64.20, *SD* = 21.33), higher than the pretest (*M*= 49.20, *SD* = 23.81).

Table 4.4
Descriptive Statistics for Vocabulary Pretest and Posttests Subscales (n =25)

	Pretest		Posttest	
Subscales	M	SD	M	SD
Context Clues	54.92	21.89	74.64	20.12
Morphology	49.20	23.81	64.20	21.33
TOTAL	52.48	19.02	69.60	18.83

Inferential statistics for vocabulary pretest and posttests

The Shapiro-Wilk test was performed to examine whether the data met the normality assumption. The *p-value* was 0.95, which showed no deviation from normality. The findings show that the mean difference of vocabulary knowledge scores was statistically significant between the pretest (*M* = 52.48, *SD* = 19.02) and the posttest (*M* = 69.60, *SD* = 18.83), t(24) = 4.45, *p* = or < 0.001, Cohen's d =0.91. Furthermore, the findings of context clues subscale revealed that the mean difference was statistically significant between the pretest subscale (*M* = 54.92, *SD* = 21.89) and the posttest (*M* = 74.64, *SD* = 20.12), t (24) = 4.65, *p* = 0.001, Cohen's d = 0.93 Additionally, the findings of the morphological subscale also showed that the mean difference between the pretest (*M* = 49.20, *SD* =23.81) and posttests (*M* =64.20, *SD* = 21.33), and were statistically significant t (24) = 3.18, p = 0.004, Cohen's d = 0. 63.

Student Perceptions of Online Learning Modules Descriptive Statistics

The Perceived Usefulness section of the Technology Acceptance Questionnaire (Hwang et al., 2013) was modified into a survey to gather information about students' perceptions regarding the effectiveness of the online vocabulary modules. This survey was designed to measure fifth-graders perceived usefulness of technology. This instrument consisted of 6 items rated on a six-point Likert scale with strongly disagree to strongly agree. However, students utilized only five of the six responses, which resulted in the Likert scale being analyzed with a five-point scale (Strongly Disagree = 1, Slightly Disagree = 2, Slightly Agree =3, Agree = 4, and Strongly Agree = 5) during the analysis process. Due to these modifications, the internal consistency of the survey was tested using Cronbach's alpha, which had a value of 0.90.

Findings showed that most students agreed with the statement that the online modules were helpful to them in acquiring new vocabulary knowledge (M = 4.20, SD =1.08). Furthermore, the statement "the vocabulary modules are more useful than using the dictionary to find meanings of words" had the highest mean score (M = 4.32, SD = 0.94) among all the items. This finding revealed that most students prefer being taught explicitly instead of using dictionaries to find word meanings. Additionally, most students agreed that the instruction provided by the online vocabulary modules made learning more accessible and better. Many students also agreed that the online modules enriched their vocabulary knowledge (M =4.16, SD = 1.02) and helped them obtain useful vocabulary (M = 4.28, SD = 1.01). Table 4.5 summarizes the descriptive statistics of students' perceptions of the online learning module.

Table 4.5
Descriptive Statistics of Students' Perceptions of Online Learning Module Survey

Questions	Mean	SD
The online vocabulary modules were helpful to me in acquiring new vocabulary knowledge.	4.20	1.08
The online vocabulary modules enriched my vocabulary learning.	4.16	1.02
The instruction provided by the online vocabulary modules made learning the new vocabulary terms easier.	4.24	0.87
The online learning vocabulary modules helped me obtain useful vocabulary when needed.	4.28	1.10
The online vocabulary learning modules helped me learn better.	4.24	1.01
The vocabulary modules are more useful than using the dictionary to find meanings of words.	4.32	0.94

This section concludes the quantitative analysis of the reading comprehension and vocabulary pretests and posttests as well as the students' perceptions. The next section provides information on the qualitative analysis of the semi-structured interviews conducted as a follow-up to the data from the survey.

Qualitative Findings

The qualitative findings originated from semi-structured interviews conducted with 14 of the 25 students who participated in this action research. The interview protocol consisted of five questions which aimed at getting a deeper understanding about the participants' perceptions of the impact that explicit vocabulary instruction had on their vocabulary knowledge. These semi-structured interviews occurred at the end of the intervention after students completed the student perception survey. I used purposive sampling (Galvan & Galvan, 2017), with the goal of getting a wide range of perspectives such as performance level, gender, and race. Students who scored 80% or higher on both

the vocabulary and reading comprehension posttests were considered high performers, those who scored 70 to 79%, were considered middle performers, and those who scored 69% and below were considered low performers. To protect the privacy of the students who participated in the semi-structured interviews I assigned pseudonyms in Table 4.6. I purposely selected five high, five middle, and four low performing students. To ensure the rigor and trustworthiness of the findings, I also compared the data to my audit trail, which was a log I kept to record the implementation of this study.

Table 4.6
Demographics, and Performance Levels

Student Pseudonym	Gender	Ethnicity	Performance Level on Posttests
Ramon	Male	Hispanic	High
Christine	Female	African American	High
Kayla	Female	Caucasian	High
Mary	Female	African American	High
Thomas	Male	African American	High
Nicole	Female	African American	Middle
Layda	Female	Hispanic	Middle
Titus	Male	Caucasian	Middle
Kamiya	Female	Multi-racial	Middle
John	Male	African American	Middle
Terry	Male	African American	Low
Kaden	Male	African American	Low
Carlos	Male	Hispanic	Low
Akada	Female	Hispanic	Low

Qualitative data from these interviews was used to address the third research question of this action research and to provide supplementary perspectives for the quantitative findings (Creswell & Plano Clark, 2017). I used recorded audio files to transcribe the data using the NVivo software. I cleaned up the transcripts by listening to each audio at least twice to ensure correct transcription by NVivo and made necessary

corrections in Microsoft Word. I read and reread the transcripts at least three times, to get an understanding of the information provided and reflected on their meanings (Creswell & Creswell, 2018). The transcripts were then uploaded onto Delve, and codes were attached to meaningful words or phrases of individual transcripts. I utilized an inductive approach to further delve into the students' perceptions about the online vocabulary learning modules.

Two cycles were used to analyze the data gathered from the semi-structured interviews. The first cycle utilized three methods of coding: in vivo, initial, and emotion coding. The second cycle of coding consisted of two rounds of pattern coding where categories and themes were developed (Saldaña, 2016)). The following sections give a detailed explanation of each coding cycle. To begin the process of coding, fourteen Microsoft Word files containing the transcripts were uploaded into the Delve software.

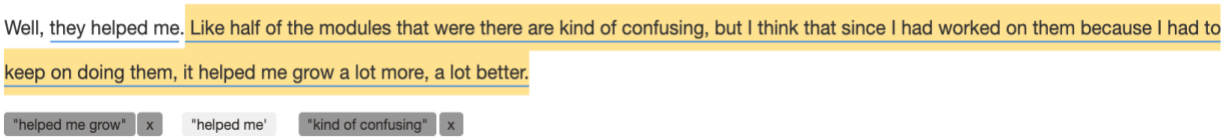
First Cycle Coding Methods

The first cycle involved coding which utilized students' language to capture their thoughts and feelings about the explicit vocabulary instruction (Creswell & Creswell, 2018). This cycle comprised of three rounds of coding using in vivo, initial, and emotion (Saldaña, 2016).

In vivo coding

The first round of coding used in vivo coding to analyze the qualitative data. The in vivo coding method provides opportunities to capture and respect the participants' voices and is appropriate for "all qualitative studies" (Saldaña, 2016, p. 106). In vivo coding allowed me to hear the students' perceptions of explicit vocabulary instruction in their own words. I assigned codes by applying a meaningful word or phrase to each line

of data, and these codes were placed in quotation marks. A total of 60 in vivo codes (e.g., "organized," "draw picture," and "helped me") honored the students' voices in the first



cycle of coding. There were instances where one sentence generated two or more in vivo codes (see Figure 4.1).

Figure 4.1 Example of In Vivo Coding in Delve

Initial coding

For the second round of coding, I utilized initial coding to help me reflect on the information collected from the interviews. I closely examined and compared each transcript, looking for similarities and differences. This process generated a total of 20 initial codes. For example, one of the initial codes was *Rereading for Word Meaning*. This code was assigned to a statement made by Titus (see Table 4.1) which stated, "I reread it and see what the author means about why he put the word there." This was Titus' explanation of how context clues assisted him in understanding the meanings of unfamiliar words. Another code I created was *Picture Representation* to Nicole's statement: "The part that helped me a lot was when we had to look at the picture and write what we thought that word means." These initial codes provided a starting point for further exploration of the data collected (Saldaña, 2016).

Emotion coding. For the third round, emotion coding was used to capture students' feelings about the explicit online vocabulary instruction delivered online (Saldana, 2016). Emotion coding was appropriate because "it provides deep insight into participants perspectives and labels the feelings participants experience" (Saldaña, 2016, p. 124). To

begin, I revisited each of the 14 transcripts, in Delve and analyzed text line by line in order to conceptualize students' feelings and thoughts. I applied a total of 8 emotion codes that students experienced, which included confidence, confusion, and enjoyment. These thoughts and feelings resulted in codes such as *Confidence*, *Confusion, Struggles*, and *Enjoyment*.

Second Cycle Coding Methods

In the second cycle of coding, I developed categories and themes. According to Saldaña (2016), the main goal of this round of coding is to "develop a sense of categorical, thematic, conceptual and or theoretical organization from your array of first cycle codes" (p. 234). Pattern coding determines the most meaningful and less important codes and helps reorganize the data (Saldaña, 2016).

First round of pattern coding

To begin, I copied and pasted the codes and corresponding data from Delve into an Excel spreadsheet (see Figure 4.2). I then closely examined the data, looking for codes that were similar. These codes were color coded to generate patterns among meaningful units of data (Saldaña, 2016). Similar codes were combined and codes that were redundant were deleted. For example, John mentioned that the modules were too short, but he didn't give evidence to support his thoughts. Therefore, I decided to drop the in vivo code "too short". Additionally, I combined first cycle codes (in vivo and initial codes) such as "recognizing words", "explain word meanings", "learning different words", and "learning unknown words," in order to create the new pattern code, *Acquiring Word Knowledge*. A total of 10 pattern codes were generated in Excel (see Figure 4.3).

First Name	Transcripts	First-Cycle Codes	First-Cycle Codes
Akada	My opinion is it was great that we have our module. It helped me on what I didn't know. Mm hmm. I really liked it.	• "really liked the modules	E. Enjoyment
Akada	The part where I get to get a picture or draw a picture and put it on Schoology	draw picture to show word meaning	Using illlustrations
	It helped me by recognizing mostly of the word how you can explain it better with some pictures.	•"recognize words".	•Explaine word meanings
	Yeah. I need a little bit more understanding on some words.	"needs more understanding of words" need for understanding	E. Confusion
	The week trying to play when I'm done with days in week one, am I? You can check and then you can put week two.	"days in weeks" confusing days.	E. Confusion
Kamiya	Well, the easiest one was maybe week one.	"easiest one"	
	The picture represents of a new word that was easy and the Latin of prefixes and suffixes. That one was a little bit hard, but not too hard	"easy"	E. Struggles Latin, Prefixes and Suffixes"
	Yeah, because it actually helped me a lot. And I noticed from when I started, like at the beginning of this me coming to this school that my grades have grown like a lot. And ever since I did the vocabulary models, it's helped me figure out a lot of new things	improvement in grades	understanding over time
	Well, it was like a little too easy for me. And I just I flew through it.	"a little easy". "flew through"	
	Well, because not only I struggle in school, but other kids struggle, too, and I feel like it helps them also have a growth in their work too	"struggle in school"	
Titus	It also shows me which one to go and tells me which one to go to next.	easy access to content	
	It helped me with a lot. Help me figure out the words when I'm reading and also it helps me know what they mean.	"figure words". "helped me"	
	use I reread it and see what the reader or the author means about why he put the word there	"context clues". Rereading for word meaning. Taking assessments. Using context clues	

Figure 4.2 Similar Codes by Color

Pattern Codes (Round 1)	Pattern Codes (Round 1)	Pattern Codes (Round 1)	Pattern Codes (Round 1)
opportunities for more engagement	**Acquiring Word Knowledge**	**Context clues**	**Organization of content**
• "really liked drawing and uploading pictures"	•"recognize words".	Using context clues	
Videos for understanding	•Explain word meanings	"context clues".	made into weeks
liked typing and searching for words	miltiple meaning words	Enjoy context clues	easy access to content
	learn unknown words	"synonyms and antonyms"	"know which day to go to"
use powerpoint and video	learning different words	antonyms helped	
	online Assessments	**Affixes and Roots**	**Picture Representation**
use media album for pictures	improvement in grades	Latin, prefixes and suffixes	draw picture to show word meaning
like creating sentences	checkpoints weekly quizzes	learn unknown roots helped me know Latin and Greek roots	"draw picture". using pictures to infer word meanings
Confusing sections	**How the modules helped**	**Recommended Changes**	
"needs more understanding of words"	"improve vocabulary"	"write less"	
need for understanding			
"days in weeks" confusing days.	"stronger". Building confidence.	" More Latin and Greek roots	
confusing	explain better	changes to video length	
"kind of confusing"	Become a better reader	"easiest part"	
issues with features	helped me describe characters in story	change easy parts	
iconfusing roots	"talk better"	use passage and questions	
E. Struggles Latin, Prefixes and Suffixes"	grow vocabulary	"a little easy". "flew through"	
	pay attention	"small paragraph"	

Figure 4.3 Pattern Codes by Color

Second round of pattern coding

During this phase, I used similarly coded passages to formulate statements that described categories that were developed into major themes (Saldaña, 2016). I used the pattern codes from the first round of cycle two, to help generate categories for meaningful units of data. I first created a new Excel spreadsheet, where I copied and paste transcripts with related pattern codes. I separated myself from the coding process for a day then returned to reexamine the codes and realized that my first cycle codes needed to be more specific in order to generate meaningful pattern codes. For instance, I

revisited the transcripts and changed “context clues” to “context clues helped me learn words.”

Pattern Codes (Round 2)	Pattern Codes (Round 2)	Pattern Codes (Round 2)	Pattern Codes (Round 2)
Percieved Benefits for Vocabulary	**Using Schoology Online Features**	**Context clues**	**Organization of content**
• "really liked drawing and uploading pictures"	use powerpoint and video	Using context clues	
Videos for understanding	Use media album for pictures	look around the words for clues.	made into weeks
liked typing and searching for words learn unknown words	Use audio to pronounce words	Enjoy context clues "context clues helped me learn words"	easy access to content videos for understanding
liked typing and searching for words "improve vocabulary"		Reread for context clues "synonyms and antonyms"	"know which day to go to"
use powerpoint and video		antonyms helped	
•Explain word meanings	**online Assessments**	**Affixes and Roots**	**Picture Representation**
use media album for pictures	improvement in grades	Latin, prefixes and suffixes	draw picture to show word meaning
like creating sentences	checkpoints	learn unknown roots	"draw picture". Really like drawing and uploading pictures
	weekly quizzes	helped me know Latin and Greek roots	using pictures to infer word meanings
Understood Books Better	**Perceieved benefits for vocabulary**	**Suggested Changes**	**Struggles experienced with learning**
Become a better reader	improve vocabulary	"write less"	Struggles Latin, Prefixes, and Suffixes
"helped me describe characters in story"	"stronger". Building confidence.	" More Latin and Greek roots	"Needs more understanding of words"
Explain better	explain better	changes to video length	trouble with context clues

Figure 4.4 Revised Pattern Codes by Color

Throughout this process, I performed peer debriefing sessions with my dissertation chair, and he prompted me to think of meaningful about my pattern and first code cycles. For instance, my dissertation chair questioned the pattern code, *Picture Representation* and encouraged me to use meaningful units from the transcripts for codes that supported it.

For instance, instead of the in vivo code "*draw pictures",* I used the initial code, *draw pictures to show word meanings*. Additionally, the pattern code "confusing sections" didn't have strong first cycle codes and was deleted. Under his guidance, I developed a more comprehensive list of pattern codes such as *Affixes and Roots, Context Clues, Picture Representation, Boost Confidence and Organization of Content* (see Figure 4.4)

After two days, I returned to the coding process to generate categories. Full transcripts from the interviews with related codes were grouped together into categories. During this process, codes were rearranged, and three categories were generated. I had another peer debriefing session with my dissertation chair focused on the categories. My chair questioned me about the reasons for choosing the categories and encouraged me to reflect on my research questions. For instance, the pattern code *Acquiring Word Knowledge* became a category during one of our discussions. To align with the third research question, *How the Modules Helped* was changed to *Perceived Benefits for Vocabulary*. During our discussion, he also clarified certain concepts such as knowledge, engagement, and designs which assisted me in thinking clearly about the codes. Eventually, I generated four categories which were *Acquiring Vocabulary Knowledge, Design Facilitating Vocabulary Instruction, Improving Reading Comprehension,* and *Making Recommendations for Improvement* (see Table 4.7).

After generating the categories, I reflected on their overarching themes. I printed the Microsoft Word document containing the categories and their corresponding pattern codes. These codes were cut and organized on the table to further examine for possible themes. According to Saldaña (2016), a theme as a sentence that identifies a unit of data and explains what it means. I looked for meaningful patterns in the codes (Desantis &

Ugarriza, 2000). I wrote some themes on index cards, then met with my dissertation chair to discuss these themes (see Figure 4.5).

Figure 4.5 First Attempt at Generating Themes

A third peer debriefing occurred with my dissertation chair where he provided constructive feedback. I then reorganized the categories to effectively reflect the themes. Taking Heeding his suggestions, I was able to see that the categories *Acquiring Vocabulary Knowledge, Design Facilitating Vocabulary Instruction, and Improving*

Reading Comprehension. From there, I was able to develop the first overarching theme, which was *Students Perceived the Explicit Vocabulary Instruction as Helpful to their Learning*. The categories, *Desired More Practice with Context Clues, Preference Towards Short Videos,* and *Needed more Instruction on Affixes and Roots* focused on areas students thought they could improve. The second theme was *Students Identified Areas of Improvements for Explicit Vocabulary Instruction* (see Table 4.7). This theme was derived from the category, *Recommendations for Improvement.* Students suggested ways for improvement of the modules as well as areas they thought they could improve.

Presentation of Findings

Two overarching themes emerged from the data analysis gathered from the semi-structured interview. The first theme focused on students' perception of the helpful nature of explicit vocabulary instruction. The second theme explored areas of the modules that students identified as needing improvement. The themes had corresponding categories, pattern codes, and first cycle codes to support them, as shown in Table 4.7.

Table 4.7

Themes and Categories Created After the Second Cycle of Coding

Themes	Categories	Pattern Codes	First Cycle Codes
Students Perceived the Explicit Vocabulary Instruction as Helpful to their Learning	Acquiring vocabulary knowledge	Affixes and Roots	Latin, prefixes, and suffixes "Helped me know Latin and Greek roots"
		Context Clues	Enjoy context clues "Synonyms and antonyms" Context clues helped me learn words
		Perceived benefits for vocabulary	"Improve vocabulary" "Recognize words". Explain word meanings Liked typing and searching for synonyms Like creating sentences

	Design facilitating Vocabulary Instruction	Picture representation	Using pictures to infer word meanings Really liked drawing and uploading pictures"
		Organization of content	Easy access to content Made into weeks "Know which day to go to"
		Using Schoology's online features	Use PowerPoint and video Use media album for pictures
		Online assessments	Improvement in grades Weekly quizzes
	Improving reading comprehension	Understood books better	Become a better reader "Helped me describe characters in story
		Boost Confidence	Build confidence "Stronger at word meanings" Express themselves better
Students Identified Areas of Improvement for the Explicit Vocabulary Instruction Modules	Recommendations for Improvement	Desired more practice with context clues	trouble with context clues needs more passage and questions "Write small paragraph with words"
		Preference towards short videos	challenges in focusing on long videos cut video length
		Needed more instruction on affixes and roots	Struggles Latin, Prefixes, and Suffixes "Needs more understanding of words"
		Preference towards more challenging words	Words were too easy More challenging words

Theme 1: Students Perceived Vocabulary Modules as Helpful to Their Learning

Researchers have supported the importance of teaching vocabulary explicitly to expand students' knowledge of words (Kusumawati & Widiati, 2017; Martin-Sanchez, 2019; Khamesipour, 2015). *Students perceived vocabulary modules as helpful* emerged as a theme from the students' responses. This theme described the students' perceptions

about ways the vocabulary modules expanded their understanding of unfamiliar words. The students claimed that the modules helped them become better readers, expanded their vocabulary, and allowed them to determine word meanings more easily. For instance, when asked about ways the modules benefited them, Nicole stated "it helped me a lot because it helped me become a better reader and it helped me learn more words that I did not know the meaning of." This theme consisted of three categories: a) acquiring vocabulary knowledge, b) design facilitating vocabulary instruction, and c) improving reading comprehension.

Acquiring vocabulary knowledge. Acquiring vocabulary knowledge encompassed students' perceptions about ways the explicit vocabulary instruction helped them attain vocabulary knowledge. Students believed that the instruction provided on affixes, roots, and context clues led to many benefits in student learning. Research supports teaching strategies to analyze word-structure clues to provide students with skills to determine the meanings of new vocabulary terms (Bauman et al., 2017; Graves, Levesque, Kieffer, & Deacon, 2017; Manyak et al., 2018; Graves et al., 2017). Additionally, teaching students to use context clues has proven to improve their vocabulary knowledge ((Bauman & Edwards, 2007; Bauman et al., 2003; Dowds et al., 2016; İlter, 2019). This category consisted of three pattern codes: a) affixes and roots, b) context clues, and c) perceived benefits for vocabulary.

***Affixes and roots*.** Latin and Greek roots, prefixes, and suffixes are known as affixes and roots, and aided in expanding the students' vocabulary knowledge. During the intervention, students were explicitly taught the meanings of different words using Latin and Greek roots, prefixes, and suffixes This is type of content is an important aspect of

vocabulary attainment (Manyak et al., 2018) and the students would be able to observe the smaller units of the words to determine whether they know the meanings and use the word parts to predict the meanings of the words (Conley, 2008).

Four out of 14 students stated that learning about affixes and roots helped increase their vocabulary knowledge. For example, John stated, "They [affixes and roots] helped me understand some of the words that I didn't know, like the Latin roots and stuff and prefixes." Understanding the meanings of smaller units of words, provided students with the opportunities for retention of words in their long-term memory (Sousa, 2001). By understanding the smaller units in words such as *"trans,"* which means *across* and *"port"* which means *to carry*, students were able to define the word *transport.* To this point, Ramon stated, "So, when I see a prefix, it helps me understand what that word really means, and it helps me know what suffixes and prefixes are." Additionally, Titus mentioned that "because the last words have those prefixes and suffixes, they sometimes help me by breaking down the word into a suffix or prefix and the base word or the root word." Knowing the meanings of affixes and roots further enhanced the students' reading comprehension. Carlos stated, "It [affixes and roots] helps me find parts of the words when I am reading."

Context clues. Using context clues was another strategy students perceived as helpful. A study conducted by Tosun (2016) found that vocabulary instruction involves integration, meaningful use, and repetition, and context clues allow for the meaningful use of words in context. Additionally, research has shown that teaching people to learn within context can be a highly effective way of improving vocabulary knowledge (Bauman & Edwards, 2007; Bauman et al., 2003; Dowds et al., 2016; İlter, 2019). In this

action research, students learned five different types of context clues: a) antonyms, b) synonyms, c) definitions d) examples, and e) inferences. For instance, Christine stated "[I]it taught me how to find context clues and teach me how to, like, look around and find what the word means. Synonyms and antonyms help me find some other words that mean the same thing." The following students validated the theme by showing ways the mini-lessons about context clues improved their vocabulary knowledge:

> Nicole: The context clues help me to learn what the words mean without actually telling us what the words mean and to help me learn the words that you can use when you do not know the meaning of the word; you can use clues around the words.
>
> Kayla: When it was the context clues ones, I look for the surrounding words. I really enjoy the context.
>
> Kamiya: And like reading and like the context, clues, it is like where they find a word and you have to look for clues around that word to figure out what the word is
>
> Titus: Oh, the context clues helped me by helping me to read around the word to figure out the words meaning
>
> John: If I did not know a word, I could look around the word and see what it meant.

Perceived benefits for vocabulary learning. Students shared perceived benefits of learning vocabulary. New words were embedded throughout the module as students participated and engaged in activities in order to build their vocabulary knowledge. In Title 1 schools, since students enter the classroom with limited vocabulary knowledge,

researchers have suggested using explicit vocabulary instruction that involves word meanings (Dole et al., 1995; Lubliner & Smetana, 2005; McKeown & Beck, 2004; Tomesen & Aarnoutse, 1998; White et al., 1990). The following were the students' perspectives on how the online modules benefited them in learning unfamiliar words.

Christine: I like that it really helped me understand the meaning of words meant and helped me learn different things about words. It helped me improve my vocabulary.

Thomas: Yes, I feel like I gained a lot of knowledge, a lot of vocabulary, a lot of words that I can use. I really like online models because they help you learn new words and, you know, more meanings and help you build your vocabulary.

Kayla: Oh, they kept on growing my little vocabulary so I can always use them.

Akada: It helped me by recognizing most of the words and how you can explain them better.

These students' responses showed the impact different content had on their understanding of unfamiliar words throughout the modules. Students also used the materials provided in the lessons to create sentences of their own, which gave them the opportunity to apply what they had learned. For example, Titus stated, “I like that we could create our own sentences with the word ... make the words from the prefix and suffix.” Kayla said, “I honestly love my words, which is why I enjoy the vocabulary online modules.”

Design facilitating vocabulary instruction. This category denotes the strategies used to guide students through learning. Studies on vocabulary development should have

meaningful opportunities to interact with unfamiliar words, to engage with different contexts, and to analyze and generalize word parts (Beck et al., 2002; Larrotta, 2011; Marzano, 2004; Nisbet, 2010). For this reason, students were provided with multiple ways to interact with new vocabulary to develop their vocabulary knowledge. This category comprises of four sections: a) picture representation, b) organization of content, c) using Schoology's online features, and d) online assessments.

Picture representation. Picture representation of words was another area that students perceived as being helpful to them. Shen (2010) stated that the use of image-based strategies where pictures are used to create mental images in learners' minds, were effective when teaching new vocabulary terms. In answer to the question on ways the online modules helped, Akada stated, "The part where I get to get a picture or draw a picture and put it on Schoology. It helped me by recognizing mostly the words you can explain better with some pictures." Within the intervention, students encountered picture representations of unfamiliar words via Schoology the multi-media feature.

Students also used pictures to represent words they encountered in lessons on prefixes, suffixes, antonyms, and synonyms. Thomas stated, "The pictures will show the reader what the word means." John also stated, "....and like drawing the stuff was like, um, explaining it and drawing it like helped me explain stuff better." Throughout this process, in order to construct knowledge, students had opportunities to engage in discussions by responding to each other's drawing through likes and comments in Schoology. Research supports the use of pictures help students visualize unfamiliar words (Shen, 2010). Mary said, "I like it when you have to draw a picture. They made me like see what kind of words I am trying to explain." Visualization seemed to have strong

impact on the students' learning as by Nicole's statement: "The part that helped me a lot was when we had to look at the picture and write what we thought that the picture was and what it meant about the picture." Other students also provided a range of responses expressing their opinions and feelings about how visualizing the vocabulary terms helped them understand unfamiliar words. The following are some of their responses:

> Kayla: The easiest part for me was the picture. I can always try my best to find out what it means.
>
> Kamiya: The easiest one I thought was helpful was the one with the picture. And you had like, write in the comment box.

Christine also described the usefulness of pictures in deciphering words with multiple meanings. This was evident from the students' perceptions of ways picture representation of the new vocabulary terms positively impacted their vocabulary knowledge based on their responses.

Organization of content. Based on students' responses, the design of instructional strategies was designed in a logical manner, which facilitated their learning. Effective educators employ a variety of strategies to engage students in the learning process. The students watched short mini-lesson videos comprised of explanations about different types of context clues, word usages, and strategies for locating synonyms and antonyms.

The modules were organized into weekly folders, and within each folder was five days' worth of content. Each day the students had a different vocabulary activity to complete (see Figure 4.6). Two students described the organization as helpful citing their ability to navigate the modules without any difficulties and Christine said, "It also shows me which one to go and tells me which one to go to next. It was organized correctly," and

Carlos said, “[I] kind of liked how you made into weeks.” Being able to easily use the features presented in an online environment aided students’ learning positively.

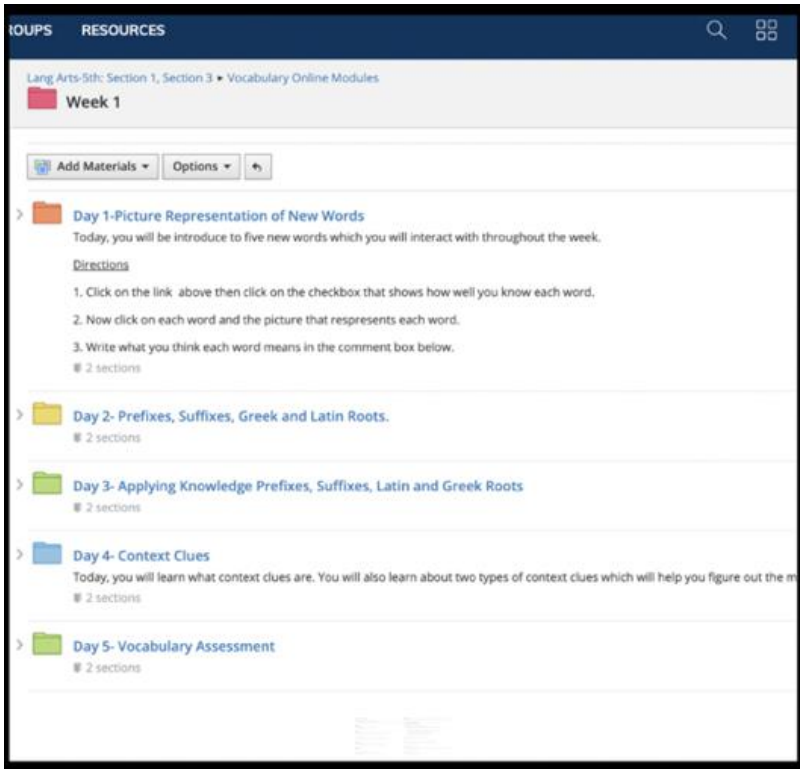


Figure 4.6 Example of the Organization of the Online Modules

Using Schoology features. Schoology is a cloud-based online platform compatible with Firefox, Internet Explorer, Safari, and Google Chrome (Schoology, 2020). It was used to deliver the explicit vocabulary instruction during this action research and supported the organization of content to facilitate vocabulary instruction. The integration of technology into vocabulary instruction has proven to have a positive impact on students’ learning (Huang, 2015). The students enjoyed using the features such as the album where they uploaded pictures to represent their words. These mini-lessons

were augmented with audio to aid in the pronunciation of the new words. The students also used the comment box to engage in discussions with each other.

Online assessments. Assessments provide educators with the opportunity to give constructive feedback to students and help diagnose difficulties students may encounter during the learning process (Grannan & Calkins, 2018). As for online assessments in this action research, students found them to be helpful for understand the nature of the weekly modules in ways that contributed to successful learning. They were able to monitor their progress when Kamiya noticed an improvement in her grade and stated, "I noticed from when I started, like at the beginning coming to this school that my grades have grown like a lot..." Additionally, Thomas said that the weekly quizzes helped him gain new vocabulary knowledge. In this way, the students' responses supported the use of online assessments.

Improving reading comprehension. This category describes how explicit vocabulary instruction enhanced students' reading comprehension skills. The semi-structured interviews revealed that offering multimodal content by including short videos on strategies for using context clues and morphological awareness was conducive to improving students' vocabulary knowledge, which improved their reading comprehension. Studies showed a high correlation between morphological awareness and reading comprehension (Memis, 2019). Concurring with Memis (2019), the affixes and roots mini-lessons seem to impact students' reading comprehension positively. Furthermore, supporting the claim that using context clues is an effective strategy for reading comprehension and vocabulary acquisition (Blachowicz & Fisher, 2000; Dowds

et al., 2016; Sáenz & Fuchs, 2002). This category is supported by two pattern codes: a) understood books better, and b) boosted confidence.

Understood books better. Students described their vocabulary growth as a tool which helped them understand the books they read. Having the ability to make meaning from texts and independently analyze new words, improved their reading comprehension (Dowds et al., 2016; Forbes & Buchanan, 2018), as evidenced by student interview responses. For instance, when Mary was asked how the module helped her, she said, "I think it helped me a lot because it helped me become a better reader and it helped me learn more words that I didn't know the meaning of. And it helped me like it helped me a lot." This showed that Mary's expansion of vocabulary knowledge made reading comprehension easier for her. Ramon said, "It helped me understand much better when I read a book," and Kayla also mentioned that attaining more vocabulary, "helped me because sometimes in class, you know, like you ask the meaning like kind of like a meaning for something that happened like a story and like a word that could explain a character. I can always use a word that I found online modules that might describe them." Kayla was able to connect new information to her prior knowledge (Ertmer & Newby, 1993) to understand what she read.

Boost confidence. When their vocabulary knowledge improved**,** students felt better about themselves, which led to better reading comprehension. Providing students with mini-lessons that explained the meaning of words and opportunities to use context clues to determine word meanings may have boosted their confidence. Studies have shown that significant vocabulary knowledge is a strong predictor of reading comprehension (Gallagher et al., 2019; Harmon & Wood, 2018; Moody et al., 2018;

Mokhtari & Nieuderhauser, 2013; National Reading Panel, 2000). Reading achievements also aid in students' development of positive reading self-concept (MacMullan & Sutherland, 2020), as evident by Mary's acknowledgment that building her vocabulary knowledge also boosted her confidence. She stated, "it made me stronger because I did not know what those words mean." Kaden also felt more confident in expressing himself. As he put it, learning new words allows a person to "talk better." He demonstrated this improvement by using synonyms he had learned during instruction.

Theme 2: Students identified areas of improvement for the explicit vocabulary instruction modules

This theme emerged from the suggestions students gave for improving the modules and from their comments about the areas in which they experienced the most difficulties while engaging with the online format. This theme accounts for one category which I identified as follows:

Recommendations for improvement. The semi-structured interviews yielded a list of student recommendations for how the online vocabulary modules could be improved. Although research is limited, student perceptions of their vocabulary knowledge seem to encourage deeper thinking about word structure and contextual analysis (Brown & Concannon, 2016). This category contains four pattern codes: a) preference towards shorter videos, b) desired more practice with context clues, c) needed more instruction on affixes and roots, and d) preference towards challenging words.

Preference towards short videos. Mini-lessons on word parts and context clues were presented as 5-10 minute videos and uploaded to Schoology in order for students to delve independently into the meanings of new vocabulary terms. However, Christine said

that the first mini-lesson video was too long, and she would prefer shorter videos that would keep her more focused.

Desired more practice with context clues. Students engaged in lessons on different types of context clues which included using synonyms and antonyms to infer word meanings, but several students expressed an interest in additional lessons about context clues. Titus said, “Sometimes when I couldn't figure out a word or the context clues, I didn't know, I couldn't figure it out.” Students also experienced confusion using synonyms and antonyms. Kamiya said, “I had struggles on the synonyms and antonyms because I didn't really get how to figure out the synonym or antonym of the word.” Teaching students to obtain word meanings through the use of context clues ((Baumann et al., 2003) is time consuming, but it would benefit students to have multiple opportunities to practice using context clues.

Kayla’s recommendation was to include more writing prompts. She stated, “I might have added a little bit of like where we would have to write a small paragraph with the words. We can like actually double check that we can use them.” Learning to embed the words within sentences and paragraphs offers students the opportunities to use context clues to determine the meanings of unfamiliar words. Similarly, Ramon suggested I provide passages that make use of the unfamiliar words and then ask questions to assess students’ ability to infer word meanings.

Needed more instruction on affixes and roots. As one of the most difficult sections, affixes and roots was another area students recommended the need for more practice. Students mentioned that some of the Latin and Greek roots were challenging for them. For instance, Kayla stated, “Because there were like, all kinds of roots and

meanings and they were kind of confusing." Christine said, "At first Latin and Greek roots were confusing to me, but at the end I actually started getting used to it," and Kayla also stated that the Latin and Greek Roots were "a little bit like, they were kind of complicated."

However, it is vital that students learn about affixes and roots during this time because found that the steepest growth in knowledge based on morphological awareness occurs in the early elementary intermediate grades (Berninger et al., 2010).

Preference towards challenging more words. One of the areas in need of improvement was the difficulty level of the vocabulary terms. Some students mentioned that the words were too easy. For example, Thomas stated, "Most of them [vocabulary word questions] are pretty easy," and Kamiya stated, "Well, it was like a little too easy for me and I flew through it." Terry also said, "Basically my weakness was, well, I already knew the word and I did it right off the top." This comment attests to a facet of the intervention that was too easy and did not challenge students. Additionally, when prompted to provide suggestions for improvements, Terry suggested that he would like to change the words he already knew which was an indication for more challenging vocabulary terms.

Summary

This chapter provided the findings of this action research using both quantitative and qualitative data. The quantitative data came from reading comprehension and vocabulary pretests and posttests and a survey of students' perceptions of the online learning modules. They found that explicit vocabulary instruction positively impacted students' vocabulary knowledge and reading comprehension. Additionally, qualitative

data from semi-structured interviews further revealed that students perceived the explicit vocabulary online modules as helpful in acquiring vocabulary knowledge.

CHAPTER 5

DISCUSSIONS, IMPLICATIONS, AND LIMITATIONS

The purpose of this action research was to evaluate the effectiveness of explicit vocabulary instruction delivered through Schoology to improve fifth graders' vocabulary knowledge and reading comprehension at an urban elementary school in the southeastern United States. This was a mixed method study where both quantitative and qualitative data were collected to answer the research questions. The quantitative data came from the reading comprehension and vocabulary pretest and posttests, as well as a survey. The qualitative data was derived from semi-structured interviews. The data was utilized to answer the following research questions: 1) How does explicit vocabulary instruction delivered through online learning modules impact students' vocabulary knowledge? 2) How does explicit vocabulary instruction delivered through online learning modules impact students' reading comprehension? 3) What are students' perceptions of the influence of the online learning modules on their vocabulary knowledge? This chapter draws connections between the existing literature and the findings of this project in order to explore the implications and limitations of the impact of explicit online vocabulary instruction on reading comprehension.

Discussion

To discuss the importance of explicit vocabulary instruction in improving students' reading comprehension and enhancing their vocabulary knowledge, I refer to my initial three research questions.

Research Question 1: How does explicit vocabulary instruction impact students' vocabulary knowledge in online learning modules?

Findings revealed that the explicit vocabulary instruction delivered through online learning modules had a positive impact on students' vocabulary knowledge. There was a statistically significant increase from the vocabulary pretest (M=52.48, SD = 19.02) to the vocabulary posttest scores (M = 70, SD= 18.83). This finding is consistent with prior research found that ample reading was insufficient to increase vocabulary among struggling readers but highlighted the importance of explicitly teaching word-learning strategies to students for any new vocabulary they might encounter (Gallagher et al., 2019; Shany & Biemiller, 2010).

The context clue subscales of the vocabulary pretests (M =54.92, SD = 21.89) and posttests (M=74.64, SD=20.12) also showed a significant increase of students' vocabulary knowledge. Existing literature argues that contextual analysis is an important component of explicit word instruction (Bauman & Edwards, 2007; Bauman et al., 2003; Dowds et al., 2016; İlter, 2019). The findings of this study confirmed the importance of teaching students' explicit contextual analysis strategies, such as using different types of context clues, to infer the meanings of unfamiliar words. In fact, the qualitative findings from the semi-structured interviews revealed that many students attributed their improved vocabulary knowledge to the modules focusing on context clues.

When the morphology subscale of the vocabulary pretest (M = 49.20, SD =23.81) and posttest (M =64.20, SD = 21.33), were compared, the findings were also statistically significant. Morphological awareness has been established by previous literature as an effective strategy for improving the vocabulary knowledge of students. The results from this study support this existing notion, showing a significant difference between the morphology subscales of the vocabulary pretest and posttests. As was the case for the context clues subscales, the qualitative data revealed that students also perceived prefixes, suffixes, and roots to be important contributing factors to their attainment of vocabulary knowledge. These findings confirmed existing literature that showed both types of instruction as assisting students with word meaning and having a positive impact on reading comprehension (Arnbak & Elbro, 2000; Berninger et al., 2010).

In past studies, very little research has been conducted on explicit vocabulary instruction in fifth-grade Title 1 classrooms. This action research seeks to remedy that by filling that gap in literature. Although explicitly pre-teaching vocabulary helps students, an emphasis was placed on using a multifaceted approach (Bauman et al., 2003; Kelley, Lesaux, Kieffer, & Faller, 2010; Taylor et al., 2009). The use of context clues and morphological awareness in this study provides different approaches to enhancing students' vocabulary knowledge.

Research Question 2: How does explicit vocabulary instruction impact students' reading comprehension in online learning modules?

The findings and interpretations from this study used two data sources to answer this research question: a) reading comprehension, b) context clues, and c) morphological awareness.

Reading comprehension

Existing research states that as students develop their reading skills and widen their language capabilities, vocabulary knowledge plays a vital role in their ability to comprehend what they read (Foorman et al., 2018; Oslund et al., 2018). After students completed the vocabulary modules, their performance on the reading comprehension posttest increased significantly. In other words, students showed higher gains on the posttest, which signified a positive impact of explicit vocabulary instruction on reading comprehension.

Context clues

Scholars of literacy have found that explicitly providing instruction on morphological meanings and context clues can provide support for students when engaging with and comprehending challenging texts (Arnbak & Elbro, 2000; Berninger, Abbott et al., 2010). This strategy has been established as an important method for improving reading comprehension and vocabulary acquisitions (Blachowicz & Fisher, 2000; Dowds et al., 2016; Sáenz & Fuchs, 2002). Qualitative findings revealed that students attributed the context clues strategies as improving their reading comprehension. As evidenced in the semi-structured interviews, students reported that the ability to make meaning from unfamiliar texts and to independently analyze new words as improved their reading comprehension (Dowds, et al., 2016; Forbes & Buchanan, 2018).

Morphological awareness

Previous research has found that the ability to understand and interact with smaller word parts, such as prefixes and suffixes, has positively impacted students' reading comprehension (Memis, 2019; Tong et al., 2011; Wolter & Pike, 2015).

However, the qualitative findings of this action research did not demonstrate a clear relationship between morphological awareness and improved reading comprehension. Students perceived the lessons on morphology as too challenging and struggled with understanding root words because many were reading below grade level. The difficulties they experienced may be due to their lack of exposure to Latin and Greek roots. Therefore, they may benefit from more explicit instruction using "strategic tool reasoning" (Conley, 2008, p. 87) as the primary cognitive strategy, ensuring morphological recognition, regardless of their vocabulary knowledge.

Research Question 3: What are students' perceptions of the explicit vocabulary instruction in online learning modules?

To answer this research question, I utilized the data collected from the survey and the semi-structured interview.

Perceptions of the online modules

Even though few studies have been conducted on students' perceptions of vocabulary knowledge, Brown and Concannon (2016) found that questions about perceptions of vocabulary knowledge encouraged students to think deeper about what they already knew, and what they would learn and apply to their understanding of new vocabulary terms. The quantitative findings from the survey revealed that most students found online modules were helpful in acquiring new vocabulary knowledge. Many also agreed that the online modules enriched their vocabulary knowledge.

The helpful nature of the module was identified as a theme labeled: *Students Perceived Vocabulary Modules as Helpful to Their Learning.* Having knowledge of oneself, the task involved, and the different strategies available to them help students

increase their expertise in strategy application (Dunlosky & Metcalfe, 2009). For instance, the qualitative findings in the *Design Facilitating Instruction* category focused on the design of the content for explicit vocabulary content and its digital format. The use of technology in the classroom was supported by cognitivists who revealed that using media and visuals help educators further scaffold students' learning through direct instruction (Dalton and Grisham 2011). Students perceived picture representation, the organization of the modules, Schoology's features, and online assessments as effective designs for their understanding of new words. For example, the picture representation method provided students with a way to visualize unfamiliar words so that they could figure out the meanings for themselves. When pictures are used to create mental images in students' minds, it makes learning memorable and provide students with the schema necessary to construct new meanings (Yilmaz, 2011; Nation, 2006; Shen, 2010). Additionally, results from the survey showed that most students found the online modules helpful to them in their efforts to acquire vocabulary knowledge. Cognitivists suggest that making learning meaningful would help learners connect new information to their prior knowledge or schema (Ertmer & Newby, 1993).

Taken as a whole, qualitative responses showed that students found the organization of the online modules provided easy access to the content. That effective organization is crucial for the success of online vocabulary modules since it would positively impact students' learning processes as they deal with the issues receiving, organizing, storing, and retrieving information by the mind (Ertmer & Newby, 1993).

Recommended areas for improvement

Despite the beneficial aspects of the modules, students also shared difficulties and recommended areas for improvement. Students suggested the use of shorter videos containing the minilessons which is an organizational issue. Although the issue was rectified with the remaining mini-lessons videos, it's critical to be mindful of the role the short-term memory plays during the learning process. Driscoll (2005) emphasized the need for chunking information since the short-term memory holds a limited amount of information.

Students also suggested more practice with context clues, affixes, and roots which was supported by Kieffer and Lesaux (2010), who stated that educators are responsible for teaching these words explicitly by scaffolding students learning through modeling, providing examples in meaningful contexts, and allowing opportunities for students to practice these unfamiliar words.

In addition, students recommended more challenging words overall. It is important to use research-based word lists when choosing vocabulary for instruction. As referenced by Biemiller (2009), students should be familiar with 2,000-3,000 specific root words. In order to develop cognitive and meta-cognitive skills necessary for understanding unfamiliar words encountered in texts, instruction should be meaningful to students (Carlo, August, and Snow 2010; Nation 2016). These findings broaden this study by indicating the need to differentiate instruction during explicit vocabulary instruction.

Implications

This research has implications for me, stakeholders such as students, teachers, administrators and district personnel, and other researchers. These implications are a) personal implications, b) implications for vocabulary education, and c) recommendations for future research.

Personal Implications

This study provided me with some personal lessons that I can use to improve my proficiency as a practitioner. These include my a) reflection on quantitative and qualitative methods, b) insights into my role as an educator, and c) plans for future action research.

Reflection on quantitative and qualitative methods

According to Mertler (2017), action research connects theory to practices, improves educational practice, and empowers teachers to be intellectually engaged. Throughout this action research process, I gained insights into ways to utilize both quantitative and qualitative methods, to find possible answers for a problem of practice. I gained knowledge on analyzing and interpreting quantitative data, which gave me the confidence to transfer this knowledge to engage in future research. Analyzing qualitative data was challenging at first, but with guidance from my dissertation chair, continued reading about the process, and authentically organizing data gathered from interviews, I felt better equipped with the coding process. This study also exemplified triangulation in action with the different data sources, which I would utilize in the future research. Triangulation is “the validating potential” (Padgett et al., 2004, p. 226) of using different types of data to capture the same phenomenon

Insights into my role as an educator

As a fifth-grade reading teacher, in a title 1 school with a diverse population, I have direct experience teaching students both vocabulary and reading lessons. I assumed that there was a relationship between vocabulary and reading instruction because I noticed that the students with richer vocabulary performed better in reading comprehension. This assumption was supported by extensive research that revealed a high correlation between vocabulary and reading (Gallagher et al., 2019; Harmon & Wood, 2018; Moody et al., 2018; Mokhtari & Nieuderhauser, 2013; National Reading Panel, 2000). The findings from the systematic implementation of this action research provided more evidence proving explicit vocabulary could be a solution to improving learners' vocabulary knowledge, while also enhancing their reading comprehension.

Plans for future action research

Engaging in this action research made me examine closely how I teach vocabulary to my students. As an educator, I am now empowered with ways to systematically plan and develop interventions to solve problems of practice. With a better grasp of teaching and learning, I can change and improve as an educator while using my talents, creativity, and expertise to meet the needs of my students (Mertler, 2017).

Implications for Vocabulary Education

Even though some students can learn vocabulary incidentally or implicitly through wide reading, most students learn best when given strategies to determine the meanings of new words (Gallagher et al., 2019; Shany & Biemiller, 2010). As such, the stakeholders of literacy education which include teachers, curriculum specialists, and textbook publishing companies. The semi-structured interview responses suggest that

reading comprehension improved when both context clues and morphological awareness were taught explicitly. Because the data shows that active engagement of word meanings improved reading comprehension (Wright & Cervetti, 2017), one can conclude that explicitly teaching strategies using context clues and analyzing word parts should be taken into consideration by teachers, curriculum specialists, and textbook publishing companies.

For effective vocabulary instruction, an educator must have a purpose in mind (Kusumawati & Widiati, 2017). Providing educators in Title 1schools opportunities to collaboratively develop an explicit vocabulary curriculum would benefit students, by providing strategies for determining the meaning of new words, which may improve their reading comprehension (Foorman et al., 2018; Oslund et al., 2018).

Findings from both the perceived usefulness survey and the semi-structured interviews revealed that students enjoyed the learning experiences offered by the online modules. As a result, using technology to deliver vocabulary instruction may assist in expanding students' vocabulary knowledge. A study conducted by Zou and Xie (2018) investigated a comprehensive word learning theory with the integration of technology and found that a personalized approach generated the best learning performance. Students also stated that the modules were well-organized and were easy to navigate and they mentioned that videos with the minilessons helped improve their vocabulary knowledge. Therefore, one can conclude that the implementation of technology in explicit vocabulary instruction would benefit students.

Implications for Future Research.

Future explicit vocabulary instruction should continue with fifth graders in title 1 schools and continue through middle and high school. In this study, fifth graders from a title 1 school were the participants who may have entered school with limited vocabulary (Nelson, et al., 2015). Future study with students in fifth-grade will provide the scaffolding necessary to build their prior knowledge for new vocabulary words they would encounter in the upper grades. According to Kieffer and Lesaux (2010), educators are responsible for teaching these words explicitly by scaffolding students learning through modeling, providing examples in meaningful contexts, and allowing opportunities for students to practice these unfamiliar words).

This study considered both context clues and morphological awareness to be effective strategies for vocabulary acquisition. Although the findings suggested strategies have an impact on students' vocabulary knowledge, future research might examine which strategy was more effective.

For my own research, I plan to include larger diverse sample sizes in future endeavors of this project. To ensure the difficulty level of target words for vocabulary instruction, I will refer to research- based word lists (Biemiller, 2009; Marzano, 2004; Coxhead, 2000). Furthermore, existing research showed students' ethnicities and socio-economic factors affect their vocabulary achievements (NCES, 2012). Therefore, future research could investigate how culturally sensitive approaches shape both the vocabulary knowledge and reading comprehension skills of students in Title 1 schools.

Finally, future studies may consider integrating additional methods of assessments to check students' understanding of unfamiliar words. Formative assessments help

educators diagnose student difficulties and provide constructive feedback that can promote a positive change in student learning (Dixson & Worrell, 2016; Grannan & Calkins, 2018). In this study, word knowledge was assessed with matching and fill-in-the blank items, but students suggested short paragraphs with the new vocabulary terms embedded, be included as well.

Limitations

This study had many limitations. First, the implementation of this study occurred during the second year of the COVID-19 pandemic. Many students were quarantined, and this study became student-paced rather than everyone working on the modules at the same time in the classroom. The main goal was for the intervention to occur daily in a classroom setting, where students would later have opportunities to interact with and learn from each other through online discussions. However, with many students being quarantined at one point or the other, some students being physically present experienced the intervention together in class, and some had to make-up work.

Second, since most of the fifth graders were below the average reading level, for their grade, they experienced difficulties articulating themselves during the interview process. This resulted in some vague responses that were repetitive.

Finally, because I was performing duties as both teacher and researcher, my presence in the study might have resulted in students providing responses that they thought would please me (Creswell & Creswell, 2018).

REFERENCES

Alamri, K., & Rogers, V. (2018). The effectiveness of different explicit vocabulary-teaching strategies on learners' retention of technical and academic words. *The Language Learning Journal, 46*(5), 622-633.

Apel, K., & Thomas-Tate, S. (2009). Morphological awareness skills of fourth grade African American students. *Language, Speech and Hearing Services in School, 40,* 312-324.

Arnbak, E., & Elbro, C. (2000). The effects of morphological awareness training on the reading and spelling skills of young dyslexics. *Scandinavian Journal of Educational Research, 44*(3), 231-251.

Arum, R., & Roksa, J. (2011). *Academically adrift: Limited learning on college campuses.* Chicago, IL: University of Chicago Press.

Ajayi, L. (2015). Vocabulary instruction and Mexican–American bilingual students: how two high school teachers integrate multiple strategies to build word consciousness in English language arts classrooms. *International Journal of Bilingual Education and Bilingualism, 18*(4) 463-484.

Bauman, J. F., Edwards, E. C., Boland, E.M., & Olejnik, S. (2003). Vocabulary tricks: Effects of instruction in morphology and context on fifth-grade students' ability to derive and infer word meanings. *American Educational Research Journal, 40(*2), 447-494.

Bauman, J.F., & Graves, M. F. (2010). What is academic vocabulary? *Journal of*

Adolescent & Adult Literacy, 54(1), 4-12.

Baumann, J.F., & Heubach, K. M. (1996). Do basal readers deskill teachers? A national survey of educations use and opinions of basals. *The Elementary School Journal, 96,* 511-526.

Bauman, J. F., Ware, D., & Edwards, E.C. (2007). "Bumping into spicy, tasty words that catch your tongue": A formative experiment on vocabulary instruction. T*he Reading Teacher, 61*(2), 108-122.

Beck, I.L., McKeown, M.G., & Kucan , L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York, NY: Guilford.

Beck, I. L., McKeown, M. G. & Kucan, L. (2005). *Choosing words to teach. Teaching and learning vocabulary: Bring research to practice*. Mahwah, NJ: Erlbaum.

Beck, I.L., McKeown, M.G., & Kucan, L. (2008). C*reating robust vocabulary: Frequently asked questions and extended exampl*es. New York, NY: Guilford.

Beck, I.L., McKeown, M.G., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction (*2nd ed.). New York, NY: Guilford

Berninger, V. W., Abbott, R.D., Nagy, W., & Carlisle, J. (2010). Growth in phonological, orthographic, and morphological awareness in grades 1 to 6. *Journal of Psycholinguist Research, 39*(2), 141–163.

Biemiller, A. (2009). *Words worth teaching: Closing the vocabulary gap*. Columbus, OH: SRA/McGraw-Hill

Bjerede, M., & Bondi, T. (2012). *Learning is personal: Stories of android tablet use in 5th grade*. Retrieved from: https://www.goodreads.com/book/show/21218407-learning-is-personal---stories-of-android-tablet-use-in-the-5th-grade?ac=1&from_search=true

Blachowicz, C. L., Fisher, P. J. & Watts-Taffe, S. (2005). Integrated vocabulary instructions: Meeting the needs of diverse learners in grades K–5. *Learning Point Associates pages,* 1-37.

Braze, D., Tabor, W., Shankweiler, D., & Mencl, W. E. (2007). Speaking up for vocabulary: Reading skill differences in young adults. *Journal of Learning Disabilities, 40,* 226–243.

Brown, P. L., & Concannon, J. P. (2016). Students' perceptions of vocabulary knowledge and learning in a middle school science classroom. *International Journal of Science Education, 38*(3), 391-408.

Brown, A., & Danaher, P. A. (2019). CHE principles: Facilitating authentic and dialogical semi-structured interviews in educational research. *International Journal of Research & Method in Education, 42*(1) 76-90.

Bryant, D. P., Goodwin, M., Bryant, B. R., & Higgins, K. (2003). Vocabulary instruction for students with disabilities: A review of research. *Learning Disability Quarterly, 26*, 117–128.

Burns, A. (2009). *Action research in second language teacher education. The cambridge guide to second language teacher education*. New York: Cambridge.

Carlo, M., August, D., & Snow, M. (2010). Sustained vocabulary-learning strategy instruction for English-language learners. In teaching and learning vocabulary:

Bringing research to practice, 137–153. New York: Routledge.

Cascio, A., Lee, E., Vaudrin, N., & Freedman, D. A. (2019). A team-based approach to open coding: Considerations for creating intercoder consensus. *Field Methods 31*(2), 116-130.

Catts, H. W. (2018). The simple view of reading: Advancements and false impressions. *Remedial and Special Education, 39*(5), 317–323.

Chen, N. S., & Hwang, G. J. (2014). Transforming the classrooms: innovative digital game-based learning designs and applications. *Educational Technology Research and Development, 62*(2), 125–128.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New York:

Routledge

Conley, M.W. (2008). Cognitive strategy instruction for adolescents: What we know about the promise, what we don't know about the potential. *Harvard Educational Review, 78*(1), 84-106.

Coyne, M. D., Simmons, D. C., Kame'enui, E.J., & Stoolmiller, M. (2004). Teaching vocabulary during shared storybook readings: An examination of differential effects. Exceptionality, *12*(3), 145-162.

Coulter, G., Robinson, L., & Charles, L.M. (2019). Vocabulary as a measure of content knowledge: Use of curriculum-based evaluation in higher education. *Reading Improvement, 56*(3), 134-148.

Coxhead, A. (2000). A new academic word list. *TESOL Quarterly, 34*(2), 213 – 238.

Creswell, J. W. (2018). *Research designs: Qualitative, quantitative and mixed methods approach*. (5th ed.). London: SAGE.

Cunningham, J. W., & Reutzel, D. R. (2019). *Curriculum associates*. Retrieved from https://www.curriculumassociates.com/-/media/mainsite/files/i-ready/research-overview-proven-to-work-brochure-2019.pdf

Dalton, B., & Grisham, D. L. (2011). "eVoc strategies: 10 ways to use technology to build vocabulary." *The Reading Teacher 64*(5), 306–317.

Demir, S. B., & Pismek, M. (2018). A convergent parallel mixed-methods study of controversial issues in social studies classes: A clash of ideologies. *Educational Sciences: Theory & Practice, 18*(1),119-149.

DeSantis, L., & Ugarriza, D. N. (2000) The concept of theme as used in qualitative nursing research. Western Journal of Nursing Research 22(3), 351–72.

Dowds, S.P., Haversack, H. R., & Parkinson, M. M. (2016). Classifying the Context Clues in Children's Literature. *The Journal of Experimental Education, 84*(1), 1-22.

Driscoll, M.P. (2005). *Psychology of learning for instruction*. Boston: Allyn and Bacon

Education Tech Research Dev, 65, 1153–1174.

Dunlosky, J., & Metcalfe, J. (2009). Metacognition. Thousand Oaks, CA: Sage.

Earle, R. S. (2002). The integration of instructional technology into public education: Promises and challenges. *Educational Technology Magazine, 42*(1), 5–13.

Ender, A. (2016). Implicit and explicit cognitive processes in incidental vocabulary acquisition. *Applied Linguistics, 37*(4), 536-560.

Foorman, B.R., Petcher, Y., & Herrera, S. (2018). Unique and common effects of decoding and language factors in predicting reading comprehension in grades 1–10. *Learning and Individual Differences, 63,* 12-23.

Forbes, F.J., & Buchanan, E. (2018). Getting “clued” in: The usage and significance of context clues. *A Journal of Undergraduate Research,11,* 114-128.

Freebody, P., & Anderson, R.C. (1983). Effects on text comprehension of differing proportions and locations of difficult vocabulary. *Journal of Reading Behavior, 15*(3), 19–39.

Gallagher, M.A., Barber, A.T., Beck, J. S., & Buehl, M. M. (2019). Academic vocabulary: Explicit and incidental instruction for students of diverse language backgrounds. *Reading & Writing Quarterly, 35*(2), 84-102.

Galvan, J. L., & Galvan, M. C. (2017). *Writing literature reviews: A guide for students of the social and behavioral sciences.* New York, NY: Taylor & Francis.

Gomez, E. A., Wu, D., & Passerini, K. (2010). Computer-supported team-based learning: The impact of motivation, enjoyment and team contributions on learning outcomes. *Computers & Education, 55*(1), 378-390.

Goodwin, P. A., & Cho S. (2016). Unraveling vocabulary learning: Reader and item-level predictors of vocabulary learning within comprehension instruction for fifth and sixth graders. *Scientific Studies of Reading, 20*(6), 490-514.

Graves, M.F., & Sales, G.C. (2012). The first 4,000 words. Retrieved from https://michaelfgraves.net/

Graves, M. F. (2016*). The Vocabulary Book: Learning and Instruction* (2nd ed.). New York, NY: Teachers College Press.

Graves, M. F., Schneider, S., & Ringstaff, C. (2017). Empowering students with word-learning strategies: Teach a child to fish. *The Reading Teacher, 71*(5), 533-543.

Hammersley, M., & Atkinson, P. (1995). *Ethnography: Principles in practice*. London:

Routledge.

Harmon, J., & Wood, K. (2018). The vocabulary-comprehension relationship across the disciplines: Implications for Instruction. *Education Sciences, 101*(8), 1-9.

Hartmann, P., & Blass, L. (2007). *Quest: Reading and writing.* New York, NY. McGraw-Hill

Heafner, T.L., & Massey, D. (2019). Situated word inquiry: Supporting inquiry and language- rich environments through technology-mediated, contextualized word learning. *The History Teacher, 52*(3), 441-460.

Hiebert, E.H., & Cervetti, G.N. (2012). What differences in narrative and informational texts mean for the learning and instruction of vocabulary? In E.B. Kame' enui & J.F. Baumann (Eds.), *Vocabulary instruction: Research to practice* (2nd ed., pp. 322 – 344). New York, NY: Guilford.

Hiebert, E.H. (2012). WordZones for 4,000 simple word families. Retrieved from http://textproject.org/archive/resources/wordzones-for-4000-simple-word-families/

Hoover, W. A., & Gough, P. B. (1990). The simple view of reading: Reading and writing: *An Interdisciplinary Journal, 2*(2), 127–160.

Hoover, W.A., & Tunmer, W.E. (2018). The Simple View of Reading: Three Assessments of Its Adequacy *Remedial and Special Education, 39*(5), 304–312.

Houghton Mifflin Harcourt (2020). Retrieved from https://www.hmhco.com/

Hwang, G. J., Hung, C. M., & Chen, N. S. (2014). Improving learning achievements,

motivations and problem-solving skills through a peer assessment-based game development approach. *Educational Technology Research and Development, 62*(2), 129–145.

Hwang, G., Sung, H., Hung, C., & Tsai, C. (2012) Development of a personalized educational computer game based on students' learning styles. *Education Tech Research Development, 60,* 623–638.

Hwang, G., Yang, L., & Wang, S. (2013). A concept map-embedded educational computer game for improving students' learning performance in natural science courses. *Computers and Education, 69,* 121-130.

Huang, S. (2015). Mixed-method research on learning vocabulary through technology reveals vocabulary growth in second grade students. *Reading Psychology, 36,* 1-30.

Huang, Y., & Huang, Y. (2015). A scaffolding strategy to develop handheld sensor-based vocabulary games for improving students' learning motivation and performance. Educational Technology *Research and Development, 63,* 691–708.

Huang, Y. M., Huang, S. H., & Wu, T. T. (2014). Embedding diagnostic mechanisms in a digital game for learning mathematics. *Educational Technology Research and Development, 62(*2), 187–207.

İlter İ. (2019). The efficacy of context clue strategy instruction on middle grades students' vocabulary development. *Research in Middle Level Education, 42*(1), 1-15.

Innaci, D. L., & Sam, D.P. (2017). Using context clues as a vocabulary learning strategy: An experimental study. *Journal of English Language and Literature, 4*(3), 39-43.

Institute of Education Sciences, U.S. Department of Education, National Center for Education Statistics. (2012). *The nation's report card: Vocabulary results from the 2009 and 2011 NAEP reading assessments* (NCES 2013 452). Washington, D.C.

Juel, C., & Deffes, R. (2004). Making words stick. *Educational Leadership, 61*, 30–34.

Jitendra, A., Edwards, L., Sacks, G., & Jacobson, L. (2004). What research says about vocabulary instruction for students with learning disabilities. *Exceptional Children, 70*, 299–322.

Kelley,J.K., Lesaux, N.K., Kieffer, M.J., Faller, S.E., (2010). Effective academic vocabulary instruction in the urban middle school. *The Reading Teacher*, 64(1), 5–14.

Kendeou, P., Muis, K.R., Fulton, S. (2011). Reader and text factors in reading comprehension processes. *Journal of Research in Reading, 34*(4), 365-383.

Kent, S.C., Wanzek, J., & Otaiba, S.A. (2017). Reading instruction for fourth grade struggling readers and the relation to student outcomes. *Reading & Writing Quarterly, 33*(5), 395-411.

Khamesipour, M. (2015). The effects of explicit and implicit instruction of vocabulary through reading of EFL leraners' vocabulary development. *Theory and Practice in Language Studies, 5*(8), 1620-1627.

Kieffer, M. J., & Lesaux, N. K. (2010). Morphing into adolescents: Active word learning for English-language learners and their classmates in middle school. *Journal of Adolescent & Adult Literacy, 54*(1), 47-56.

Kingsley, T. L., & Grabner-Hagen, M. M. (2018). Vocabulary by gamification *The Reading Teacher, 71*(5), 545–555.

Kivunja, C., & Kuyini, B. A. (2017). Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education, 6*(5), 26-41.

Kuder, S. J. (2017). Vocabulary instruction for secondary students with reading disabilities: An updated research review. L*earning Disability Quarterly, 40*, 155–164.

Kuncel, N. R., Crede, M., & Thomas, L. L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature. *Review of Educational Research, 75*(1), 63–82.

Kusumawati, E., & Widiati, U. (2017). The effects of vocabulary instructions on students' reading comprehension across cognitive styles in ESP. *Journal of Education and Practice, 8*(2),175-184.

Larrotta, C. (2011). Second language vocabulary learning and teaching: Still a hot topic. *Journal of Adult Education*, *40,* 1-11.

Lawrence, F. J., Hagen, M. A., Hwang, K. J., Lin, G., & Lerva, A. (2018). Academic vocabulary and reading comprehension: exploring the relationships across measures of vocabulary knowledge. *Read Writ, 32,* 285-306.

Leider, M. C., Proctor, P., Silverman, D. R., & Harring, J.R. (2013). Examining the role of vocabulary depth, cross-linguistic transfer, and types of reading measures on the reading comprehension of Latino bilinguals in elementary school. *Read Writ, 26,* 1459-1485.

Lei, J., & Zhao, Y. (2007). Technology uses and student achievement: A longitudinal study. *Computers & Education 49*, 284–296.

Levesque, C. K., Kieffer, M.J., & Deacon, H.S. (2017). Morphological awareness and reading comprehension: Examining mediating factors. *Journal of Experimental Child Psychology, 160*, 1-20.

Li, Y., & Zhang, X. (2019). L2 vocabulary knowledge and L2 listening comprehension: A structural equation model. *Canadian Journal of Applied Linguistics, Special Issue, 22*(1), 85-102.

Lin, Y. (2015). The acquisition of words' meaning based on constructivism. *Theory and Practice in Language Studies, 5*(3), 639-645.

Liu, P. (2016). Technology integration in elementary classrooms: Teaching practices of student teachers. *Australian Journal of Teacher Education, 41*(3), 87-104.

Lonigan, C. J., Burgess, S.R., Schatschneider, C. (2018). Examining the simple view of reading with elementary school children: Still simple after all these years. *Remedial and Special Education, 39*(5), 260-273.

Low, P. (2017). E-learning implementation in foundation English class: Learners' perspectives and learning achievement. *International Journal of Computer Theory and Engineering, 9*(4), 285-289.

Maddux, C., & Cummin, R. (2004). Fad, fashion, and the weak role of theory and research in information technology in education. *Technology and Teacher Education, 12*(4), 511-533.

Mancilla-Martinez, J., & Lesaux, N. K. (2011). The gap between Spanish speakers' word reading and word knowledge: A longitudinal study. *Child Development, 82,* 1544 –1560**.**

Manyak, P.C., Bauman, J.F., & Manyak, A. (2018). Morphological analysis instruction in elementary grades: Which morphemes to teach and how to teach them. *The Reading Teacher, 72*(3), 289-300.

Martin-Sanchez, C. (2019). *An investigation of the effects of implicit vs. explicit vocabulary instruction on the word knowledge of first grade students in an urban elementary school*. University of West Georgia, Georgia.

Marzano, R.J. (2004). *Building background knowledge for academic achievement*. Alexandria, VA: Association for Supervision and Curriculum Development.

Merriam S.B. & Caffarella R.S. (1999) *Learning in adult-hood: A comprehensive guide,* (2nd ed). San Francisco, CA: Jossey-BassPublishers.

Memiş, M. R. (2019). A research on reading comprehension and morphological awareness levels of middle school students and the relationship between these concepts. *Journal of Language and Linguistic Studies, 15*(2), 649-677.

Mertler, C. A. (2017). *Action research: Improving schools and empowering educators* (5th ed.). London: SAGE.

Mertler, C. A. (2016). *Action research: Improving schools and empowering educators.* Thousand Oaks, California: Sage Publications.

Mills, G. E. (2014). *Action research: A guide for the teacher researcher* (5th ed.). Boston, MA: Pearson.

Mokhtari, K., & Nieuderhauser, (2013). Vocabulary and syntactic knowledge factors in 5th grade students' reading comprehension. *International Electronic Journal of Elementary Education, 5*(2), 157-170.

Moody, S., Hu, X., Kuo, L., Jouhar, M. Xu, Z., & Lee, S. (2018). Vocabulary instruction: A critical analysis of theories, research and practice. *Education Sciences, 180*(8), 1-22.

Moore P. & Fitz C. (1993) Gestalt theory and instructional design. *Journal of Technical Writing and Communication, 23*, 137–157.

Moursund, D., & Bielefeldt, T. (1999). Will new teachers be prepared to teach in a digital age? A national survey on information technology in teacher education. *Reports Research, 143*, 1-60.

Mouza, C. (2008). Learning with laptops: Implementation and outcomes in an urban, under-privileged school. *Journal of Research on Technology in Education, 40*(4), 447-472.

Muhid, A., Chalim, A., Hilaliyah, H., Budiana, N., & Wajdi, M.B. (2020). The Effect of Metacognitive Strategies Implementation on Students' Reading Comprehension Achievement. *International Journal of Instruction, 13*(2), 1308-1470.

Nation, I. S. (2016). How large a vocabulary is needed for reading and listening? *Canadian Modern Language Review, 63*(1), 59-82.

National Assessment of Educational Progress. (2017). *Average reading score of fourth-grade students in 2017 not significantly different compared to 2015.* Retrieved April 24, 2019, from https://www.nationsreportcard.gov/reading_2017/#/states/scores?grade=4

National Center for Education Statistics. (2018). *Reading performance.* Retrieved April 24, 2019, from https://nces.ed.gov/programs/coe/indicator_cnb.asp

National Center for Education Statistics. (2012*). The nation's Report Card: Vocabulary ResultsFromthe2009 and 2011 NAEP Reading Assessments* (Report No. 452). Institute of Education Sciences, U.S. Department of Education. https://www.nichd.nih.gov/sites/default/files/publications/pubs/nrp/Documents/report.pdf

Nelson, K. L., Dole, J. A., Hosp, J. L., & Hosp, M. K. (2015). Vocabulary instruction in K-3 low-income classrooms during a reading reform project. *Reading Psychology, 36*, 145–172.

Nisbet, D. L. (2010). Vocabulary instruction for second language learners. *Journal of Adult Education*, *39*(1), 10-15.

Northrop, L., & Andrei, E. (2019). More than just word of the day: Vocabulary apps for English learners. *The Reading Teacher*,*72*(5), 623–630.

Ogilvie, E., & McCrudden, M. T. (2017). Evaluating the social validity of the early start Denver model: A convergent mixed methods study. *Journal of Autism and Developmental Disorders, 47*, 2899-2910.

O'Mallley, J. M., & Chamot, A. U. (1990). Learning strategies in second language acquisition. Cambridge: Cambridge University Press.

Oslund, E.L., Clemens, N.H., Simmons, D. C., & Simmons, L. E. (2018). Direct and indirect effects of word reading and vocabulary on adolescents' reading comprehension: Comparing struggling and adequate comprehenders. *Read Writ, 31*, 355–379.

Ouellette, G., & Beers, A. (2010). A not-so-simple view of reading: How oral vocabulary and visual-word recognition complicate the story. *Reading and Writing: An Interdisciplinary Journal, 23,* 189–208.

Parel, R. (2004). The impact of lexical inferencing on second language reading proficiency. Reading and Writing: *An Interdisciplinary Journal, 17,* 847–873.

Prabha, T.,& Aziz, A.(2020). Effectiveness of Using Poly Category Mind Map for Vocabulary Development. *Arab World English Journal, 11*(2), 214- 231.

Rafool, B., Sullivan, E., & Al-Bataineth, A. (2012). Integrating technology into the classroom *The International Journal of Technology, Knowledge, and Society, 8*(1), 57-70.

Reutzel, D. R, & Cooter, R. B. (2013). *The essentials of teaching children to read* (3rd ed.). New York, NY: Pearson.

Ritchey, K.D., Palombo, K., Silverman, R.D., & Speece, D.L. (2017). Effects of an informational text reading comprehension intervention for fifth-grade students. *Learning Disability Quarterly, 40*(2), 68-80.

Roskos, K.A., Zulolo, N., & Primm, A. (2017). A small-scale, feasibility study of academic language time in primary grade language arts. *Early Child Development and* Care, *187*(3),615-629.

Sáenz, L. M., & Fuchs L. S. (2002). Examining the reading difficulty of secondary students with learning disabilities: Expository versus narrative text. *Remedial and Special Education, 3*(1), 31-41.

Saldaña J. (2016). *The coding manual for qualitative researchers* (3rd ed.). Thousand Oaks, CA: Sage.

Savage, R., Burgos, G., Wood, E., & Piquette, N. (2015). The simple view of reading as a framework for national literacy initiatives: a hierarchical model of pupil-level and classroom-level factors. *British Educational Research Journal, 41*(5), 820-844.

Schoology (2020). Retrieved on July 28 from https://www.schoology.com/resources?type_1%5B%5D=research

Senechal, M. (2006). Testing the home literacy model: Parent involvement in kindergarten is differentially related to grade 4 reading comprehension, fluency, spelling, and reading for pleasure. *Scientific Studies of Reading, 10*(1), 59-87.

Shany, M., & Biemiller, A. (2010). Individual differences in reading comprehension gains from assisted reading practice: Pre-existing conditions, vocabulary acquisition, and amounts of practice. *Read Writ, 23,* 1071-1083.

Silverman, R., Kim, Y., Hartranft, A., Nunn, S., & McNeish, D. (2017). Effects of a multimedia enhanced reading buddies program on kindergarten and Grade 4 vocabulary and comprehension. *The Journal of Educational Research, 110*(4), 391-404.

Sousa, D. A. (2001). *How the brain learns* (2nd ed.). Thousand Oaks, CA: Corwin.

South Carolina College-and-Career-Ready Standards for English Language Arts. (2015). South Carolina Department of Education Columbia, South Carolina. https://www.ed.sc.gov/scdoe/assets/file/programs-services/59/documents/ELA2015SCCCRStandards.pdf

South Carolina Department of Education. (2018). 2018 *South Carolina college and career-ready assessments (SC READY) test scores.* Retrieved September 30, 2018 from https://ed.sc.gov/data/test-scores/state-assessments/sc-ready/2018/school-scores-by-grade-level/?ID=2301054

South Carolina Report Card. (2019). Retrieved February 12, 2019, from

https://screportcards.com/overview/academics/academic-achievement/?q=eT0yMDE4JnQ9RSZzaWQ9MjMwMTA1NA

Spencer, E. J., Goldstein, H., & Kaminski, R. (2012). Teaching vocabulary in storybooks: Embedding explicit vocabulary instruction for young children. *Young Exceptional Children, 15(*1), 18–32.

Spencer, M., Richard K. W., & Yaacov, P. (2019). The reading comprehension and vocabulary knowledge of children with poor reading comprehension despite adequate decoding: Evidence from a regression-based matching approach. *Journal of Educational Psychology, 111*(1), 1-14.

Spencer, M., Wagner, R. K., & Petscher, Y. (2018). The reading comprehension and vocabulary knowledge of children with poor reading comprehension despite adequate decoding: Evidence from a regression-based matching approach. *Journal of Educational Psychology, 1*, 1-14.

Stringer, E. T. (2007). *Action research* (3rd ed.). London: SAGE.

Swosinski, L. (2015). *Effect of explicit vocabulary instruction on reading comprehension among elementary aged English language learners* (Doctoral dissertation). Available from ProQuest Dissertation and Theses database. (UMI No. 3706068).

Taherdoost, H. (2019). What is the best response scale for survey and questionnaire? design; review of different lengths of rating scale / attitude scale / likert scale. *International Journal of Academic Research in Management, 8*(1), 1-10.

Taylor, T.D., Mraz, M., Nichols, W.D., Rickelman, R.J., Wood, K.D., (2009). Using explicit instruction to promote vocabulary learning for struggling readers, *Reading & Writing Quarterly*, *25*(2-3), 205-220.

Tong, X., Deacon, S. H., Kirby, J.R., Cain, K., & Parrila, R. (2011). Morphological awareness: A key to understanding poor reading comprehension in English. Journal of *Educational Psychology, 103*(3), 523-534.

Torppa, M., Gergiou, G.K., Kristina, M., Niemi, P., Poikkeus, A.M., & Nurmi, J. (2016). Examining the simple view of reading in a transparent orthography: A longitudinal study from kindergarten to grade 3. *Merrill-Palmer Quarterly, 62*(2), 79–206.

Tosun, B.C. (2016). Students' views on contextual vocabulary teaching: A constructivist view. *Journal of Language and Linguistic Studies, 12*(2), 87-106.

Twine, R., Khan, K., & Hundt, G. L. (2017). Assessing the effectiveness of a longitudinal knowledge dissemination intervention: Sharing research findings as part of knowledge brokerage in rural South Africa. *Gateways: International Journal of Community Research and Engagement*,*10*, 143–163.

U.S. Department of Education, National Center for Education Statistics. (2018). *Student access to digital learning resources outside the classroom* (NCES 2017-098), Executive Summary.

Vygotsky LS. 1978. *Mind in society*. Cambridge: Harvard University Press.

Wachira, P., & Keengwe, J. (2011). Technology integration barriers: Urban school mathematics teachers' perspectives. *Journal of Science Education and Technology, 20*(1), 17–25.

Wagner, D.L., & Espin, C.A. (2015). The reading fluency and comprehension of fifth and sixth grade struggling readers across brief tests of various intervention approaches. *Reading Psychology*,*36*, 545–578.

Wanzek, J. (2014). Building word knowledge: Opportunities for direct vocabulary instruction in general education for students with reading difficulties. *Reading and Writing Quarterly,30* (2), 139-164.

Watts-Taffe, S., Gwinn, C. B., Johnson, J. R., & Horn, M. L. (2003). Preparing preservice teachers to integrate technology. *The Reading Teacher, 57*(2), 130–138.

Winne, P.H. (1985). Cognitive processing in the classroom. *The International Encyclopedia of Education*, 2, 795–808.

Wolter, J. A., & Pike, K. (2015). Dynamic assessment of morphological awareness and third-grade literacy success. *Language, Speech and Hearing Services in Schools, 46*, 112-126.

Wong, B. Y. L. (1980). Activating the inactive learner: Use of questions/prompts to enhance comprehension and retention of implied information in learning disabled children. *Learning Disability Quarterly, 3*, 29–37.

Wright, T. S., & Cervetti, G. N. (2017). A systematic review of the research on vocabulary instruction that impacts text comprehension. *Reading Research Quarterly, 52*(2),203-226.

Yilmaz,K. (2011). The cognitive perspective on learning: Its theoretical underpinnings and implications for classroom practices. *The Clearing House, 84*, 204-212.

Yurtbaşı, M. (2015). Building English vocabulary through roots, prefixes and suffixes. *Global Journal of Foreign Language Teaching, 5*(1), 44-51.

Zhao, Q. & Li, H. (2018). Application of New Media Technology in College English

Vocabulary Teaching. *Educational Sciences: Theory & Practice, 18*(6), 3591-3598.

Zou, D., & Lambert, J. (2017). Feedback methods for student voice in the digital age. *British Journal of Educational Technology, 48*(5), 1081-1091.

Zou, D., & Xie, H. (2018). Personalized word-learning based on technique Feature analysis and learning analytics. *Educational Technology & Society, 21*(2), 233–244.

APPENDIX A

LETTERS OF APPROVAL TO CONDUCT THE STUDY

DRAYTON MILLS
ELEMENTARY

Phone: 864-586-7979
Fax: 864-586-7989

1500 Skylyn Drive
Spartanburg, SC 29307

November 4, 2020

Mrs. Bauer –

This letter verifies that I am in support of your research being conducted at DMES under the conditions you outlined to me in writing. They include students doing the following:

1. Participate in vocabulary lessons in Schoology for at least 15-20 minutes daily.
2. Learn different types of context clues to help them understand the meanings of new words.
3. Use morphological awareness to also assist with determining the meanings of unfamiliar words.
4. Complete a reading and comprehension pretest and posttest, a survey, and interview about their perceptions of the effectiveness of the Schoology modules on their vocabulary knowledge.
5. Allow interviews to be recorded in order to ensure the details that they provide are accurately captured.

Participating teachers will:

1. Provide students with 15-20 minutes daily to work on the vocabulary modules in Schoology.
2. Keep a participating teacher's journal where she will record information daily about student behaviors during the implementation process.
3. Complete reflective notes on her perceptions about the Schoology modules for delivering explicit vocabulary instruction.

Additionally, parents will be provided with letters of consent to grant permission for their children to participate in this study.

I am pleased to be able to host both you and your research!

Sincerely,

Thomas Webster, Principal
Drayton Mills Elementary School

November 4, 2020

Mr. Webster
Principal of Drayton Mills Elementary
1500 Skylyn Drive,
Spartanburg, SC 29307

RE: Permission to Conduct Action Study

Dear Mr. Webster:

I am writing to request permission to conduct an action study at your institution. I am currently a doctoral candidate in the Department of Education, at the University of South Carolina under the direction of Dr. Allison Moore. The University of South Carolina, Department of Educational Studies is sponsoring this research study. The purpose of this study is to evaluate the implementation of explicit vocabulary instruction delivered through Schoology to improve fifth graders' vocabulary knowledge and reading comprehension at Drayton Mills Elementary School.

I am seeking permission to conduct this research with the fifth graders and the English Language Arts fifth grade teacher, here at Drayton Mills Elementary. This study will take place in January 2021 and will occur over a period of 5 weeks.

If approval is granted, the students will do the following:

1 Participate in vocabulary lessons om Schoology for at least 15-20 minutes daily
2 Learn different types of context clues to help them understand the meanings of new words.
3 use morphological awareness to also assist with determining the meanings of unfamiliar words.
4 Complete a reading and comprehension pretest and posttest, a survey/interview about their perceptions of the effectiveness of the Schoology modules on their vocabulary knowledge.
5 Allow interview to be recorder recorded in order to ensure the details that you provide are accurately captured.

The Participating teacher will do the following:

1. Provide students with 15-20 minutes daily to work on the vocabulary modules in Schoology
2. Keep a participating teacher's journal where you will record information daily about student behaviors during the implementation process.
3. Complete reflective notes on your perceptions about your perceptions of the Schoology modules for delivering explicit vocabulary instructions.

There are no risks or discomforts associated with this study since the data collected will remain absolutely confidential and anonymous. No cost will be incurred by your school or individual participants. Additionally, parents will be provided with letters of consent to grant permission for their children to participate in this study.

Your approval to conduct this study will be greatly appreciated and I would be happy to answer any questions or concerns you may have. You may contact me at tfbauer@spart7.org or 828-228-5909.

If you agree, please sign below. Alternatively, kindly submit a signed letter of permission on your school's letterhead acknowledging your consent and permission this study to be conducted here at Drayton Mills Elementary School.

Sincerely,

Tonia Bauer

University of South Carolina: Columbia

Approved by:

Thomas Webster, Principal — 11/4/2020

Print your name and title here — Signature and date

APPENDIX B

PARENT CONSENT FORM

The Evaluation of the Implementation of Explicit Vocabulary Instruction on Reading Comprehension Delivered Through Schoology

KEY INFORMATION ABOUT THIS RESEARCH STUDY:
Your child is invited to volunteer for a research study conducted by Tonia Bauer. I am a doctoral candidate in the Department of Education, at the University of South Carolina under the direction of Dr. Allison Moore. The University of South Carolina, Department of Educational Studies is sponsoring this research study. The purpose of this study is to evaluate the implementation of explicit vocabulary instruction delivered through Schoology to improve fifth graders' vocabulary knowledge and reading comprehension at Drayton Mills Elementary School. You are being asked to participate in this study because you are a parent of a fifth grader at Drayton Mills Elementary School. This study is being done at Drayton Mills Elementary School and will involve approximately 50 volunteers.

The following is a short summary of this study to help you decide whether you will like your child to be a part of this study.

PROCEDURES:
This study will take place in the Spring of 2021 and will occur over a period of 5 weeks.
If you agree to participate in this study, your child will do the following:

1. Participate in vocabulary lessons om Schoology for at least 15-20 minutes daily
2. Learn different types of context clues to help them understand the meanings of new words.
3. use morphological awareness to also assist with determining the meanings of unfamiliar words.
4. Complete a survey/interview about students' perceptions students' perceptions of the effectiveness of the Schoology modules on their vocabulary knowledge.

Have your interview recorded in order to ensure the details that you provide are accurately captured.

RISKS/DISCOMFORTS:
There are no risks or discomforts associated with this study.

BENEFITS:
Taking part in this study will provide your child with the opportunity to increase his/her vocabulary knowledge.

CONFIDENTIALITY OF RECORDS:
Information obtained about your child's vocabulary knowledge during this research study will remain confidential and released only with your written permission. Study information will be securely stored in locked files and on password-protected computers. Results of this research study may be published or presented at seminars; however, the report(s) or presentation(s) will not include your child's name or any other identifying information about your child.

VOLUNTARY PARTICIPATION:
Participation in this research study is voluntary. You are free to not allow your child to participate, or to stop participating at any time, for any reason without negative consequences. In the event that you do withdraw from this study, the information you have already provided will be kept in a confidential manner. If you wish to withdraw from the study, please call or email the principal investigator listed on this form.

I have been given a chance to ask questions about this research study. These questions have been answered to my satisfaction. If I have any more questions about my participation in this study, I am to contact Tonia Bauer at 828-228-5909 or email tfbauer@spart7.org.

Concerns about your child's rights as a research subject are to be directed to, Lisa Johnson, Assistant Director, Office of Research Compliance, University of South Carolina, 1600 Hampton Street, Suite 414D, Columbia, SC 29208, phone: (803) 777-6670 or email: LisaJ@mailbox.sc.edu.

I agree to participate in this study. I have been given a copy of this form for my own records.

If you wish to participate, you should sign below.

Signature of Subject / Participant	Date
Signature of Qualified Person Obtaining Consent	Date

APPENDIX C

STUDENTS' ASSENT FORM

The Evaluation of the Implementation of Explicit Vocabulary Instruction on Reading Comprehension delivered through Schoology

I am a researcher from the University of South Carolina. I am working on a study about explicit vocabulary instruction on reading comprehension delivered through Schoology and I would like your help. I am interested in learning more about your vocabulary knowledge and reading comprehension. Your parent/guardian has already said it is okay for you to be in the study, but it is up to you if you want to be in the study.
If you want to be in the study, you will be asked to do the following:

1. A vocabulary and reading comprehension pretest and posttest.
2. Participate in vocabulary lessons om Schoology for at least 15-20 minutes daily.
3. Learn different types of context clues to help them understand the meanings of new words.
4. use morphological awareness to also assist with determining the meanings of unfamiliar words.
5. Complete a survey and interview about your perceptions of the effectiveness of the Schoology modules on their vocabulary knowledge.
6. Have your interview recorded in order to ensure the details that you provide are accurately captured.
7. Meet with me individually and talk about the strengths and weakness of the vocabulary modules in Schoology. The talk will take about 30 minutes and will take place at school.

Any information you share with me will be private. No one except me will know your answers to the questions. You do not have to help with this study. Being in the study is not related to your regular class work and will not help or hurt your grades. You can also drop out of the study at any time, for any reason, and you will not be in any trouble and no one will be mad at you. Please ask any questions you would like to about the study.

My participation has been explained to me, and all my questions have been answered. I am willing to participate.

_____ _____

Print Name of Minor

Age of Minor

_____ _____

Signature of Minor

Date

APPENDIX D

INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL

UNIVERSITY OF
SOUTH CAROLINA

OFFICE OF RESEARCH COMPLIANCE

INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH
DECLARATION of NOT RESEARCH

Tonia Bauer
University of South Carolina
Columbia, SC 29208 USA

Re: **Pro00105716**

Dear Mrs. Tonia Bauer:

This is to certify that research study entitled ***The Evaluation of Explicit Vocabulary Instruction on Reading Comprehension Delivered Through Schoology*** was reviewed on **11/12/2020** by the Office of Research Compliance, which is an administrative office that supports the University of South Carolina Institutional Review Board (USC IRB). The Office of Research Compliance, on behalf of the Institutional Review Board, has determined that the referenced research study is not subject to the Protection of Human Subject Regulations in accordance with the Code of Federal Regulations 45 CFR 46 et. seq.

No further oversight by the USC IRB is required. However, the investigator should inform the Office of Research Compliance prior to making any substantive changes in the research methods, as this may alter the status of the project and require another review.

If you have questions, contact Lisa M. Johnson at lisaj@mailbox.sc.edu or (803) 777-6670.

Sincerely,

Lisa M. Johnson
ORC Assistant Director and IRB Manager

APPENDIX E

HOUGHTON MIFFLIN HARCOURT PERMISSION LETTER

Houghton
Mifflin
Harcourt

January 25, 2022 **ID:** 13135

Tonia Bauer
Spartanburg District 7
610 Dupre Drive Spartanburg
Spartanburg, South Carolina 29307
tfbauer@spart7.org
828-228-5909

Dear Ms. Tonia Bauer:

Thank you for your interest in the *JOURNEYS*, Benchmark Assessments, Unit 2 and 6, Grade 5. This letter is in response to your recent request for use of these materials in your research project entitled: *THE EFFECT OF EXPLICIT VOCABULARY INSTRUCTION ON ELEMENTARY STUDENTS' VOCABULARY KNOWLEDGE AND READING COMPREHENSION: AN ACTION RESEARCH*

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Please indicate your acceptance of these terms by signing and returning one copy of this letter to me; permission is granted upon receipt of this signed copy.

Thank you for your interest in our publications.

Sincerely,
Kristin Riggs
Kristin Riggs
Lead IP Analyst

Signature on Behalf of Tonia Bauer:
Tonia Bauer Date: 1/25/2022
SIGNATURE
Tonia Bauer 5th Grade Teacher
NAME AND TITLE

9400 Southpark Center Loop, Orlando, FL 32819 T 407.345.3797 F 407.345.2418 hmhco.com

APPENDIX F

STUDENT PERCEPTION SURVEY QUESTIONS (ORIGINAL AND MODIFIED VERSIONS)

Student Perception Original Questions	**Student Perception Modified Questions**
The learning approach enriched the learning activity.	The online vocabulary modules enriched my vocabulary learning.
The learning system was helpful to me in acquiring new knowledge.	The online vocabulary modules were helpful to me in acquiring new vocabulary knowledge.
The learning mechanism provided by the learning system smoothed the process.	The instruction provided by the online vocabulary modules made learning new vocabulary easier.
The learning system helped me obtain useful information when needed.	The online vocabulary modules helped me obtain useful vocabulary when needed.
The learning approach helped me learn better.	The online vocabulary modules helped me learn better.
The learning approach is more useful than the conventional computer-assisted learning approaches	The online vocabulary modules are more useful than using the dictionary to find meanings of words.

APPENDIX G

SEMI-STRUCTURED INTERVIEW PROTOCOL

Thank you for your willingness to participate in this semi-structured interview. This interview will be based on the vocabulary modules you have used for the past five weeks and its impact on your vocabulary knowledge. Our interview today will last for approximately 15 minutes. I plan on recording this interview to make sure I collect accurate information given by you. After organizing the information gathered, I will share a copy of the final report with you. The information given by you will be used for research purposes only and would not be given to anyone without your consent. Before we begin the interview, do you have any questions? If at any point during this interview a question arises, feel free to ask. I would be happy to answer your questions. Let's begin!

General Information

1. Tell me your opinion about the online vocabulary modules in Schoology?
    A. How did they help you?
    B. How did they improve your understanding of the meanings of new words?

2. Do you feel that you benefitted from participating in the online vocabulary modules? Please explain

3. What would you say were the strengths of the online vocabulary modules?

4. What were the weaknesses of the online vocabulary modules?

5. If you could change anything about the vocabulary modules, what would it be and why?

Thank you for your participation in this interview