

**AN INVESTIGATION OF AN ACADEMIC VOCABULARY INTERVENTION FOR
UPPER ELEMENTARY STUDENTS WHO STRUGGLE WITH READING**

by

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The current study is a mixed-methods, action research study in which Word Generation (WG) resources were used with students in a learning support classroom. Word Generation is a cross-curricular vocabulary intervention centered on academic language. The goal of the study was to investigate the vocabulary learning of students and to evaluate the WG resources. Students demonstrated statistically significant positive differences on the pretest/posttest and maintained that learning on a delayed posttest. Important findings related to students' developing word consciousness indicated that the WG resources positively impacted students' word awareness and that the WG target vocabulary is representative of high-utility academic language. The findings show promise for incorporating multifaceted vocabulary instruction such as Word Generation into middle school classrooms with students who struggle with reading.

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PREFACE

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1.0 INTRODUCTION

The literacy development of adolescents has become the focus of attention in the United States because of students' low performance on criterion-referenced or state assessments (Ford-Connors & Paratore, 2015). According to the National Assessment of Educational Progress (NAEP, 2013) report, only one third of eighth-grade students who were tested demonstrated that they were able to comprehend text proficiently. These findings foreground the importance of engaging adolescent students in the kind of vocabulary instruction that supports students in successfully navigating the demands of the academic language found in more advanced textbooks. Without this ability, students will continue to face challenges in making sense of a text's meaning (Nagy & Townsend, 2012). Consequently, effective vocabulary instruction should be a keystone in all classrooms beginning in kindergarten and continuing into and beyond the upper elementary grades (Silverman, 2007; Lesaux et al., 2010). It is through the implementation of systematic and explicit vocabulary instruction that students will build a foundation for understanding the meanings of multiple words across multiple contexts (Beck & McKeown, 2007; Lesaux et al., 2010).

The relationship between vocabulary development and reading comprehension has been researched for more than a decade. Several researchers have argued that students' vocabulary knowledge is a critical factor in their ability to comprehend text (e.g., Beck et al., 1982; McKeown et al., 1983; Kieffer & Lesaux, 2007; Lesaux, Kieffer, Faller, & Kelley, 2010).

However, there is little evidence that vocabulary development is being addressed in schools (Beck, McKeown, & Kucan, 2002). Rather, vocabulary instruction continues to reflect traditional views by engaging students in instructional methods focused on “dictionary definitions and short exercises such as a cloze paragraph or matching words with definitions or synonyms” (Beck et al., 2013, p. 2). Shallow vocabulary instruction has been proven to be ineffective in increasing students’ reading comprehension (Beck & McKeown, 2007). Thus, it is imperative to conduct further research centered on the development and implementation of effective vocabulary approaches that incorporate the most principled instructional methods as described by current theoretical perspectives and vocabulary research.

Recognizing this, my problem of practice focuses on vocabulary development of upper elementary students who struggle with reading. I am concerned about the differences in students’ vocabulary knowledge and aware of the need to document instructional approaches that address those differences. In order to understand research related to this topic, I have surveyed current literature to address the following questions:

- What theoretical perspectives can guide the development of an instructional intervention designed to support the vocabulary development of adolescent students who struggle with reading?
- What does research reveal about the most effective aspects of approaches for vocabulary instruction?

2.0 REVIEW OF LITERATURE

2.1 THEORETICAL PERSPECTIVES

The theoretical perspective that informs current vocabulary research focuses on the connection between lexical quality and text comprehension. That is, a reader's lexicon, or mental dictionary, is believed to be the "central connection point between the word identification system and the comprehension system" (Perfetti & Stafura, 2014, p. 24). This perspective contradicts earlier frameworks that suggest general processes such as decoding, retrieval, memory, and fluency lead to comprehension (Perfetti, 2007). In short, Perfetti challenges the notion that automatic word identification leads to better comprehension by asserting that efficient retrieval of word identities that provide readers with an appropriate meaning in a particular context is more significant than efficient word identification (Perfetti, 2007). To support this notion, Perfetti has developed the Lexical Quality Hypothesis (LQH) which describes the relationship between a reader's mental lexicon and text comprehension.

According to Perfetti (2007) "variation in the quality of word representations has consequences for reading skill, including comprehension" (p. 357). The features of those word representations include phonology, orthography, morphology, semantics and syntax. Consider the features of the word *ambiguous*. An ambiguous question may be difficult to answer since there are multiple ways to interpret or make sense of the question. One feature of a high-quality

lexical entry for *ambiguous* is its meaning, or semantic representation. A second feature of a high-quality lexical entry is its pronunciation, or phonological representation (am-bi-gyŋ-wŋs). A third feature of a high-quality lexical entry is its orthographic representation, or spelling. The fourth attribute of a high-quality lexical entry is its morphological representation. The word *ambiguous* possesses a recognizable morpheme or unit of meaning. This morpheme is the suffix *-ous*, which means “full of,” or “having” a given quality. An ambiguous question has multiple meanings or is full of uncertainty. The final attribute of a high-quality lexical entry centers on syntax, which refers to the function and form of words. For example, *ambiguous* is the adjective form of the word *ambiguity*, which is a noun. According to Perfetti (2007), it is through the development of high-quality representations that students are able to rapidly determine a word’s meaning in various contexts. Without this understanding, students fail to automatically retrieve coherent and reliable representations of a word’s meaning imperative for text comprehension.

According to the LQH, effective vocabulary instruction investigates two things: (1) what words mean and (2) how they work (Perfetti, 2007). To understand how words work, instructional strategies should address the interconnectedness among the features (i.e., phonology, orthography, morphology, semantics, and syntax) in order to develop high-quality representations. The quality of a reader’s word representation is influenced by the number of experiences with the word that a reader has, as well as the reader’s level of word identification skills. Recognizing this, less skilled readers may benefit from instructional practices that focus on the development of stable and retrievable meanings of words in particular contexts. Kucan (2012) claims that stable or high-quality representations are developed “by engaging students in carefully designed instructional sequences that focus directly on word meanings” (p. 363). Consequently, vocabulary instruction cannot be haphazard. Instead it must be systematically

designed to develop high-quality lexical representations as outlined by the Lexical Quality Hypothesis.

Perfetti and Stafura (2014) developed a second framework, the Reading Systems Framework, which places a reader's mental lexicon as the central connection between word identification and text comprehension. Advances in comprehension research and theory reveal that vocabulary knowledge has causal links to text comprehension. Recognizing this, the authors developed a general framework to reflect the progress made in comprehension research and theory. According to Perfetti and Stafura (2014), the relationship between lexical processes and comprehension processes is explained through two hypotheses. First, "text comprehension depends on understanding words and integrating their meaning into a mental model of the text and more skilled comprehenders do this better than less skilled comprehenders" (p. 26). Second, "learning words depends on acquiring information about both forms and meanings from word-learning events, and more skilled comprehenders do this better than less skilled comprehenders" (p. 26).

As shown in Figure 1, Perfetti and Stafura argue that a reader's mental lexicon sits directly in the middle of two reading systems—influenced and influencing both systems. These reading systems include the word identification system (i.e., phonological units and orthographic units) and the comprehension system (i.e., meaning units). Moreover, a readers' mental lexicon is influenced by that reader's general world knowledge.

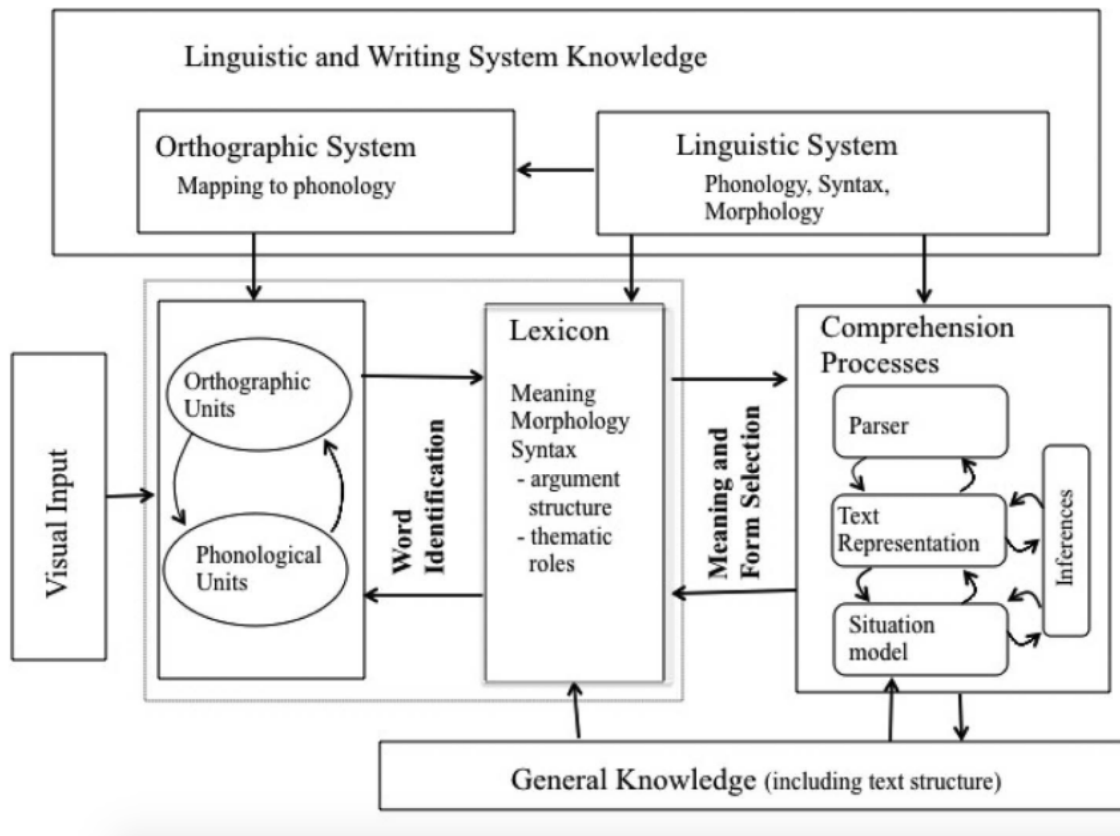


Figure 1. Reading Systems Framework (Perfetti & Stafura, 2014, p. 24).

Both the Lexical Quality Hypothesis (Perfetti, 2007) and the Reading Systems Framework (Perfetti & Stafura, 2014) provide a framework for considering the research focused on effective vocabulary instruction.

2.2 INSIGHTS FROM VOCABULARY RESEARCH

In a survey of current vocabulary research, the following themes emerged as the essential components of effective vocabulary instruction: (a) student-friendly definitions, (b) multiple exposures, (c) multiple contexts, (d) deep processing, (e) emphasis on high-utility academic language, (f) text-based approaches, (g) engagement in structured discussions, and (h) engagement in writing tasks. The following sections examine each component more closely to provide a greater insight into the research-based evidence that supports each theme. It should be noted that each component listed above falls under or expands upon the notion of rich vocabulary instruction, which was described by Beck and McKeown (2007) as instruction that includes “explaining word meanings in student-friendly language, providing multiple examples and multiple contexts, and requiring students to process words deeply by identifying and explaining appropriate and inappropriate uses and situations and creating multiple contexts” (p. 254). In addition, researchers agree that effective vocabulary instruction should be systematic and explicit as well as rich and lively (Beck, McKeown, & Kucan, 2013).

2.3 STUDENT-FRIENDLY EXPLANATIONS

According to Beck and her colleagues (2013), the first component of effective vocabulary instruction is student-friendly rather than dictionary definitions. Beck et al. suggest that word meanings should be presented in a student-friendly manner in order to “explain the concept in language that is readily accessible so students can understand the concept with ease” (p. 46). Another reason for using student-friendly definitions relates to students’ abilities to attend to the

entire definition versus just a part of the explanation (Beck et al., 2013). Dictionary definitions are concisely written to conserve space. As a result, dictionary definitions provide extremely limited or incomplete definitions. By contrast, student-friendly definitions are not limited to space restrictions; therefore, allowing the definitions to be expansive and complete.

The authors support their argument by outlining the weaknesses associated with dictionary definitions. The following four characteristics of dictionary definitions interfere with word meaning: (1) weak differentiation, (2) vague language, (3) more likely interpretation, and (4) multiple pieces of information (Beck et al., 2013). Weak differentiation refers to definitions that do not explicitly demonstrate how target words are different from other similar words (Beck et al., 2013). For example, the word *conspicuous* is defined as “easily seen” according to the dictionary. This definition of *conspicuous* is weakly differentiated from the general domain of *visible*. However, the meaning of *conspicuous* extends beyond being “easily seen” to incorporate the idea that something *conspicuous* is highly recognizable due to distinct characteristics (i.e., size and color) or inappropriateness to a situation (Beck et al., 2013, p. 44).

A second shortcoming of dictionary definitions is the use of vague language. Beck et al. (2013) highlight this through the example of the word *typical*. The dictionary defines *typical* as “a type” (p.44). Most young readers would struggle to develop an understanding of the word *typical* based on such a vague definition. In contrast, student-friendly explanations provide students with detailed definitions absent of vague language (Beck et al., 2013).

The third flaw of dictionary definitions relates to the development of interpretations that differ from the intended meaning. For example, consider the word *devious* which is defined as ‘straying from the right course; not straightforward’ (Beck et al., 2013 p. 44). To a young reader,

the more likely interpretation of *devious* may be understood in a concrete way to mean “crooked walking or getting lost” (Beck et al., 2013, p. 44).

A final shortcoming of dictionary definitions focuses on definitions that provide multiple pieces of information with little guidance on how the pieces are associated. For example, *exotic* is defined as “foreign; strange; not native” (Beck et al, 2013, p. 44). The authors argue that this definition of *exotic* may cause learners to question how the meaning parts are integrated by asking, “is something exotic if it is strange but not foreign, or only if it is both foreign and strange” (p.44). These examples provided by Beck et al. (2013) demonstrate the problematic features associated with dictionary definitions. Basically, dictionary definitions fail to provide students with enough information to develop an accurate understanding of a word’s meaning. In contrast, student-friendly definitions provide detailed descriptions that allow students to form accurate representations. Thus, student-friendly definitions lay the foundation for developing deep and complete representations of a word’s meaning.

The Lexical Quality Hypothesis (Perfetti, 2007) identifies the knowledge of written word forms and meanings as integral features in developing high-quality lexical entries or representations. The authors suggest that text comprehension is dependent upon a students’ understanding of words and their ability to integrate new meanings into an existing mental model of the text. Thus, the use of student-friendly explanations is a critical component of instructional approaches to vocabulary instruction grounded in the construct of lexical quality as described by Perfetti (2007).

2.4 MULTIPLE ENCOUNTERS

Researchers agree that effective vocabulary instruction includes multiple encounters (McKeown, Beck, Omanson, & Pople 1985; Stahl, 1986; Beck & McKeown, 1991). McKeown, Beck, Omanson, and Pople (1985) found that frequency of instruction allowed for the greatest gains in vocabulary acquisition. The authors set out to determine the relationship between more encounters and learning. McKeown et al. (1985) found that 10-18 encounters sufficiently improved proficiency related to word knowledge skills. Nagy and Herman (1987) concede that effects on vocabulary acquisition occurred only after six or ten encounters. In short, more encounters generated better results than fewer encounters (McKeown et al., 1985; Beck & McKeown 1991; 2007).

2.5 MULTIPLE CONTEXTS

Closely related to the importance of multiple encounters is the importance of multiple contexts. Research suggests that vocabulary instruction is most effective when a variety of activities or examples are used to define the word in multiple contexts (Stahl, 1986). Stahl (1986) suggests that individuals must possess both definitional and contextual information to fully “know” a word. To possess contextual information is to understand the “core concept the word represents and how that core concept is changed in different contexts” (Stahl, 1986, p. 663). For example, the word *smoke* can mean slightly different things based on the context (e.g., smoke a cigarette; smoke a pipe; or smoke marijuana). The definition of the word *smoke* remains the same, but the action of smoking varies based on the context. This example provided by Stahl (1986) highlights

the importance of developing students' abilities to interpret a word's meaning in a particular context. Thus, Stahl suggests that vocabulary instruction should strive to create a balance between definitional and contextual information. It is through this balance that the strongest effects on student learning were observed.

Perfetti and Stafura (2014) argue that word comprehension links the word identification system to the comprehension system at the sentence, text, and situation level. The authors suggest that comprehension is a process of word-to-text integration. From this perspective, comprehension involves accessing mentally stored lexical entries and relevant associations stored in memory and connecting those to representations of the context or situation. According to Perfetti and Stafura (2014) "As words are identified, they are comprehended in relation to the representation of the text. The comprehension process links the word to an existing referent (or event) in a mental model or extends the mental model to include a new or updated referent (or event)" (p. 33). Kintsch (1988) agrees that word identification is dependent upon a reader's ability to identify a written word and its associations. For example, when readers encounter the written word *bank*, they must then access what they know about banks such as money and overdrafts. According to Kintsch (1988), appropriate meaning of ambiguous words or phrases are activated while inappropriate meanings are suppressed during word identification. Perfetti and Stafura (2014) agree when they write "rapid, automatic activation of associated knowledge from memory" is necessary for successful word-to-text integration (p. 34). Furthermore, Kintsch (1988) suggests that two sources of information contribute to text comprehension: (1) the syntactical features of the text itself and (2) one's knowledge about language and the world. These arguments align with the Lexical Quality Hypothesis (Perfetti, 2007; Perfetti & Hart, 2002) on the basis that high-quality representations formed through understanding the

interconnectedness between phonology, orthography, morphology, semantics, and syntax “allows readers to rapidly, precisely, and flexibly determine the meaning of a word in a particular context” (Kucan, 2012, p. 361). Thus, the development of strong lexical representations centered on linguistic and world knowledge leads to more efficient text comprehension.

2.6 DEEP PROCESSING

The fourth component of effective vocabulary instruction focuses on depth of processing. Stahl (1986) defines deep processing as “making more connections between new and known information or spending more of one’s mental effort on learning” (p.664). Basically, effective vocabulary instruction employs methods that require students to think “deeply” about a word and its relationships (Stahl, 1986). The process of learning a word is complex and involves a series of steps (Beck et al., 2013). Therefore, the development of word knowledge is a gradual process that occurs over time and depends on multiple experiences and exposures to words and related ideas (Ford-Connors & Paratore, 2015). Perfetti (2007) contributes to the discussion of deep processing by examining lexical quality. Lexical quality refers to the extent to which students have developed a high or low quality representation of a word’s meaning (Perfetti & Hart, 2002). According to Perfetti and Hart (2002), high-quality representations involve an understanding of the interconnectedness of word features. Students who possess high-quality representations are able to flexibly determine word meanings in particular contexts.

2.7 WORD SELECTION

A fifth component of effective vocabulary instruction that emerges from a consideration of vocabulary research is the emphasis on high-utility academic language. The selection of the words to teach is an important feature of effective vocabulary instruction. Beck et al. (2013) suggest selecting words representative of mature language users and found across domains. The authors designed a three-tier framework to define the words worthy of instructional focus. Tier One words are basic words frequently heard in oral conversations. Most school-aged students have had multiple encounters with these words from a young age. Thus, Tier One words rarely are selected for instructional focus. Tier Three words are domain-specific words that are isolated to a content area (e.g., science and social studies). Tier Three words are infrequently encountered and are best learned for a specific need versus wide-learning. Therefore, Tier Three words receive minimal instructional focus. Conversely, Tier Two words appear across a number of academic content areas and knowing them can promote comprehending discipline-specific texts as well as general texts. Tier Two words are frequently found in written texts rather than in oral conversations. Thus, these words are less familiar to students and require greater instructional focus in order to increase students' experiences and exposures with such words. Beck et al. (2013) argue that Tier Two words can significantly contribute to students' language repertoire, rich knowledge of words, and verbal functioning.

The work of Baumann and Graves (2010) centered on academic vocabulary further contributes to the framework for selecting words. According to Baumann and Graves, words selected for instruction should reflect both general and discipline-specific academic concepts. General academic language refers to words that appear frequently across a wide range of academic materials (e.g., math, science, literature, and social studies). For example, the words

contradict, *circumstances*, *precede*, *fervent*, and *retrospect* are commonly found in written texts across academic domains (Beck et al., 2013). Beck et al. (2013) label general academic words as Tier Two words. Discipline-specific academic language “refers to content-specific terms and expressions found in content area textbooks and other technical writing (Baumann & Graves, 2010, p. 6). For example, the words *mean*, *median*, *mode*, and *standard deviation* are discipline-specific words isolated to the field of statistics. These words are not generalized across content-areas. Beck et al. (2013) label discipline-specific words as Tier Three words.

Hence, the purpose of selecting target words that are classified as *academic* is based on the notion that “academic language facilitates academic thinking” (Nagy & Townsend, 2012, p. 92). In other words, effective vocabulary instruction should increase students’ understandings of the words presented in academic settings in order to enhance their abilities to communicate and think about disciplinary concepts. A final point focuses on the argument that word selection must be strategic in order to identify the words or concepts that are imperative for comprehension and future learning (Nagy & Hiebert, 2010). The authors suggest selecting target words based on morphological relationships and semantic relationships. Morphological relationships refer to words that are morphologically related words (i.e., *corporate*, *incorporate*, or *corporation*) (Nagy & Hiebert, 2010). The authors argue that teaching morphologically related words leads to greater efficiency of instruction. Additionally, morphological relationships explicitly uncover the morphemes or units of meaning found across similar words. It is hoped that instructional practices focused on morphological relationships will enable students to independently recognize such relationships in their reading (Nagy & Hiebert, 2010). Nagy and Hiebert (2010) also believe that target words should be selected based on semantic relationships. According to Nagy and Hiebert (2010), “learning words in semantically related groups leads to more precise knowledge,

insofar as the meaning of a word lies in the ways that it contrasts with words of similar meaning” (p. 393). Basically, the authors are saying that the target words should center on a common theme in order to establish well-developed semantic relationships. The authors also believe that semantic relatedness among target words leads to vocabulary instruction that teaches concepts rather than individual words. Nagy and Hiebert (2010) suggest that the ultimate goal of vocabulary instruction is to increase students’ knowledge of concepts and the relationships that exists among these concepts. Thus, the systematic selection of target words should be reflective of concepts necessary for text comprehension across academic domains.

Beyond strategic selection of words, the number of words selected is also important. Kelley, Lesaux, Kieffer, and Faller (2010) contend that vocabulary instruction should focus on deeply understanding a small number of words versus understanding a lot of words in a shallow manner. Based on this, teachers may want to limit the selection of target words in order to allow ample instructional time for deep processing of word meanings.

2.8 VOCABULARY SELECTION FROM TEXTS THAT STUDENTS ARE READING

Research suggests that vocabulary development and acquisition increases through the use of text-based approaches; that is, the words that students are learning appear in the texts that they are reading. Lesaux, Kieffer, Faller, and Kelley (2010) developed a text-based vocabulary intervention known as Academic Language Instruction for All Students (ALIAS). Each unit was centered on a short piece of engaging informational text aimed at introducing and building conceptual knowledge of target words. Lesaux et al. (2010) found that short informational texts

allow general academic concepts to be taught with high rates of success. The authors also found that the text-based approach was successful in improving adolescents' vocabulary and comprehension, especially those who struggle with reading (Lesaux et al., 2010).

2.9 THE IMPORTANCE OF VOCABULARY USE IN WRITTEN AND ORAL DISCOURSE

Research supports engaging students in structured academic talk and writing for the purpose of learning vocabulary through using it. Lesaux and her colleagues (2010) found that an increase in structured discussions and writing tasks lead to greater gains in students' vocabulary development. Such forums offer multiple opportunities for students to practice words in various contexts. Furthermore, the use of discussion and writing tasks emphasizes deep processing by requiring students to rationalize their understandings related to word knowledge. Not much research has focused on vocabulary development and writing.

Lisa Yonek (2008) contributed to the limited research on vocabulary development and writing by examining the persuasive essays of fourth-grade students in an urban school district. Yonek (2008) investigated the influence of traditional or robust vocabulary instruction on students' use of target words and writing quality. The traditional vocabulary instruction emphasized dictionary definitions, context sentences, and matching activities (i.e., words to definitions; synonyms; antonyms). The robust vocabulary instruction emphasized student-friendly definitions, engaging activities, and lively verbal environments. A constant in both forms of instruction was the number of encounters with the target words. Additionally, the students in both instructional groups participated in the same persuasive writing unit prescribed

by the district's core language arts program. Yonek (2008) found that a high number of encounters enabled students in the traditional and robust instructional groups to demonstrate growth on traditional word knowledge assessments (i.e., multiple-choice). For example, students in both instructional groups demonstrated growth ranging between 88 and 100% from the pretest to the posttest (Beck et al., 2013). By contrast, the author found that less-traditional assessments (i.e., degree of word knowledge) revealed larger differences between the two instructional groups. For example, on average, students in the traditional instructional group incorrectly answered 17 of 36 questions while students in the robust instructional group incorrectly answered 3 of 36 questions (Beck et al., 2013). These results support the argument that the vocabulary instruction necessary for improving students' performance on multiple-choice measures is limited. It also suggests that the knowledge required to perform well on traditional assessments is insufficient for engaging in more complex language tasks, such as comprehension and composition (Beck et al., 2013). Furthermore, Yonek (2008) found that students in the robust instructional group generated essays that used more of the target words. For example, students in the robust instructional group incorporated 8 more target words from the pre- to posttest essay. In comparison, students in the traditional instructional group only incorporated 4 more target words from the pre- to posttest essay (Beck et al., 2013). The author also reported that the students' writings in the robust instructional group contained greater focus and content. This finding suggests that students' knowledge of Tier Two words enables them to compose more coherent and content-rich essays. Thus, Yonek's (2008) study provides evidence that a relationship between vocabulary development and writing exists. However, in order to foster this relationship students must engage in robust vocabulary instruction that emphasizes the deep processing of Tier Two words.

The work of Snow, Lawrence, and White (2009) contributes to the research focused on the relationship between classroom discussion and vocabulary knowledge. Snow et al. (2009) designed an intervention called Word Generation for implementation in an urban middle school. The intervention adheres to research-based principles associated with effective vocabulary instruction and provides multiple opportunities to use the target words in classroom discussions, debates, and writing tasks (Snow et al., 2009). The intervention was designed to address two goals: (1) participation of teachers across academic domains and (2) scaffolding teachers' pedagogical practices towards effective vocabulary instruction and classroom discussion (Snow et al., 2009).

To accomplish these goals, Snow et al. (2009) designed Word Generation as a cross-content vocabulary intervention. Each week the five all-purpose academic words were taught across the academic subjects including English Language Arts, math, science and social studies. The daily activities promoted oral discussion and debate on 4 days of the week, and writing on the fifth. On Monday, the five all-purpose academic words were introduced through a brief text centered on a controversial issue. The introduction of the target words included student-friendly, content-related definitions. The introduction activities occurred within the English Language Arts classroom. On Tuesday, Wednesday, and Thursday, the math, social studies and science teachers provided instruction on the five all-purpose words as they related to each academic subject. On Friday, the students wrote an essay to articulate their stance on the week's controversial issue.

After implementation, the authors found that the students engaged in the program learned more of the targeted words than the students not in the program. Furthermore, the authors found that language minority students showed greater gains than their English-only peers (Snow et al.,

2009). Lawrence, Capotosto, Branum-Martin, White, and Snow (2012) conducted a longitudinal follow-up study on the Word Generation program. They also found that gains were greater for language minority students than for English-only students after participation in the intervention.

A final study connected to the Word Generation program was conducted by Lawrence, Crosson, Paré-Blagoev, and Snow (2015). The authors conducted an analysis to “determine if improved discussion was a mechanism accounting for program impacts on vocabulary” (Lawrence et al., 2015, p. 751). Toward that end, the authors embedded discussion-based activities into the Word Generation program. The goal was to create a respectful, collaborative classroom environment that promoted engagement in rigorous content and active student participation. To accomplish this, the following pedagogical practices were implemented: (a) pose authentic, open questions that require reasoning, (b) teachers and students explore complex concepts together, (c) students explain their thinking and provide evidence for their claims, and (d) peer-to-peer exchanges. The authors suggest that effective teachers facilitated high-quality discussions by asking open-ended questions and using follow-up questions that required students to explain their thinking. The use of productive follow-up questions challenged the students to think more deeply and promoted higher levels of student engagement. Finally, the authors suggest that high-quality discussions provide opportunities for students to apply and hear a wealth of academic words over time and in various contexts.

A major finding of the study reports that teachers implementing the Word Generation program displayed dramatically higher levels of effective classroom discussion than control teachers. The authors believe that higher levels of classroom discussion may be attributed to the teachers’ engagement in professional development tasks and the use of curricular materials designed to elicit student opinion. Thus, Lawrence and his colleagues claim that a limited

professional development program and engaging curricular materials may improve classroom discussion. Despite a dramatic increase in classroom discussion, the students' failed to show significant gains in their vocabulary knowledge according to the Gates-MacGinitie Vocabulary assessment. Lawrence et al. (2015) suggest that the poor results may be related to the use of a multiple-choice synonym assessment. These types of assessments often fail to assess depth or dimension of word knowledge. This finding replicates a general finding "that standardized measures of general vocabulary knowledge rarely show effects from targeted vocabulary interventions" (Lawrence et al., 2015, p. 781). Thus, the authors recommend that the use of curriculum-based assessments may be more sufficient in detecting intervention effects. However, the study did reveal that improve discussion "mediated the treatment effect on student learning" (Lawrence et al., 2015). The authors argue that prior studies have not established a relationship between effective classroom discussion and improved work knowledge. Therefore, the work of Lawrence and his colleagues (2015) supports the claim that an increase in the amount and quality of academic discussion is related to increase in students' acquisition of targeted vocabulary.

2.10 A POTENTIAL MODEL FOR THE DESIGN OF A PRINCIPLED VOCABULARY INTERVENTION FOR MIDDLE SCHOOL STUDENTS

A review of literature related to vocabulary instruction that reflects the theoretical principles of Perfetti's Lexical Quality Hypothesis revealed one study of significance. That study was conducted by Lesaux et al. (2010) through the development and implementation of an intervention entitled Academic Language Instruction for All Students (ALIAS). ALIAS was developed for students in mainstream, low-performing English language arts classrooms. It is a

text-based vocabulary approach that focuses on the development of academic language (Lesaux et al., 2010). The intervention is research-based and reflective of the best practices for increasing vocabulary development.

The ALIAS program was 18 weeks in length divided into 8 two-week units. Each unit consisted of an 8-day lesson cycle as well as 2 one-week review units. The daily lessons were designed to be 45 minutes and occurred 4 days per week. Each unit was developed around a short piece of engaging informational text. Lesaux et al. rationalized the use of a text-based approach due to evidence that effective vocabulary intervention develops both definitional and contextual information. The intervention also promotes instructional strategies focused on developing accurate word meanings through student-friendly definitions, discussions, and writing tasks. The authors asserted the importance of the use of discussion and writing tasks based on evidence that deep processing occurs through oral and written activities (Beck et al., 2002; 2013). Another key component of ALIAS is the focus on morphology. Lesaux et al. (2010) incorporated the use of direct instruction of word forms to increase students' vocabulary knowledge. Other researchers agree that morphology instruction is beneficial to increasing vocabulary knowledge (Perfetti, 2007; Kieffer & Lesaux, 2007). The program also incorporates the use of multiple encounters and multiple contexts. This is grounded in research that supports the development of accurate and deep processing of word meanings through multiple encounters in various contexts (McKeown et al., 1985; Stahl, 1986; Beck & McKeown, 1991; Beck et al., 2013). The final component of the intervention program, ALIAS, focuses on creating a coherent piece of writing using the target words. Lesaux et al. (2010) rationalized the use of writing prompts based on evidence that supports the reciprocal relationship between reading and writing.

Lesaux and her colleagues (2010) claimed that the multifaceted curriculum was a departure from traditional approaches to vocabulary instruction. According to the authors, “the approach is in sharp contrast to the common practice of starting with a list of words, memorizing definitions, and completing basic activities (e.g., using the words in disconnected sentences) or using words that publishers provided during textbook work, which are not always high-impact academic words that are required for comprehending a range of texts” (p. 220). In making this comment, the authors urged a recognition of the shortcomings of traditional practices of vocabulary instruction.

2.11 CONCLUSION

The Lexical Quality Hypothesis (Perfetti, 2007) provides a theoretical framework for evaluating existing approaches to vocabulary instruction and for developing new approaches. The work of Lesaux and her colleagues (2010) provides an example of a program that matches the LQH emphasis on orthography, phonology, morphology, semantics, and syntax. Research with the Word Generation program (Snow et al., 2009; Lawrence et al., 2012; Lawrence et al., 2015) underscores the importance of discussion and multiple contexts for learning about and vocabulary.

A number of features for effective vocabulary instruction were consistent across the literature, including: (a) student-friendly definitions, (b) multiple exposures, (c) multiple contexts, (d) deep processing, (e) emphasis on high-utility academic language, (f) text-based approaches, (g) engagement in structured discussions, and (h) engagement in writing tasks. Each

component listed above promotes instructional strategies that move beyond incidental and shallow processing of words.

Based on these findings, I conducted a study addressing the following research questions:

- How can the theoretical perspectives and research findings identified in this review guide the development of an instructional intervention designed to support the vocabulary development of adolescent students who struggle with reading?
- What are the results of implementing such an intervention?

3.0 METHODS

This is a mixed-methods, action research study in which the Word Generation (WG) resources were used to implement an adapted vocabulary intervention. Prior studies of WG were designed as quasi-experimental and/or longitudinal studies (Snow et al., 2009; Lawrence et al., 2012; & Lawrence et al., 2014). In the present study, a quasi-experimental design was not employed due to the absence of a comparison or control group. Instead, the study focused solely on investigating the vocabulary improvements of the students participating in the intervention. Furthermore, the study was not implemented across content-area classrooms. By this I mean, the math, science, and social studies teachers did not implement the intervention. Instead, the intervention was confined to my language arts classroom. While my study differs from previous WG studies, the prior studies have shown positive effects, so that provided an incentive for me to use the resources in a different setting and in a different way to investigate possible positive effects on student vocabulary learning. Thus, the goal of my study was to investigate the vocabulary gains of a small population of students after participating in an adapted version of the WG program.

3.1 PARTICIPANTS

The participants included nine sixth-grade students (one language minority learner and eight native English speakers) from a middle school in a suburban district in southwestern Pennsylvania. The sample consisted of five females and four males, and the median age of participants at the beginning of the intervention was 11 years and 3 months. Six of the nine participants included students who qualified for and received special education services. All participants were assigned to the same group and received the same intervention. Informed consent was obtained from all participants.

Participants were selected using convenience sampling. In other words, the study centered on students that were assigned to my reading support classroom. Prior to the study, a scripted language arts curriculum governed the instructional practices within my classroom. The curriculum, which functions as a language arts intervention, serves students who are two or more years below grade level. The program is designed around direct and explicit instruction and is aimed at helping students overcome skill gaps. Due to a focus on direct and explicit instruction, the curriculum hinders students' opportunities to engage in academic discussions. In fact, discussion is not a component of the program. Instead, the curriculum is designed to be largely teacher-directed. Furthermore, the writing component of the program is inadequate. Over the course of 10 lessons, students completed one, highly-scaffolded written composition. As a result, the participants entered into the present study with limited knowledge and experience on how to effectively engage in academic discussions and writings.

3.2 TEACHING PLAN AND RESOURCES

The intervention lasted seven-weeks and followed a 10-day cycle that included a variety of whole-group, small-group, and independent activities designed to promote deep processing through multiple opportunities for listening, speaking, reading, and writing with the target words. Table 1 provides a description of each day in the cycle. Daily lessons were designed to take 40-50 minutes for implementation. It should be noted that a 5-day introduction unit was taught to familiarize students to the intervention's routines and activities. The following three units (5.1, 5.2, & 5.3) operated on the 10-day cycle described in Table 1. In addition, the lesson components and resources described in the table below are free to educators through the Word Generation (SERP, 2009) website: <http://wordgen.serpmedia.org/teacher.html>.

Table 1 Daily Lesson Components, Procedures, Resources, and Examples

	Lesson Components	Procedures	Resources	Examples
Day 1	Introduce target words. Each unit focuses on six target words.	Introduce target words using vocabulary cards and scripted word chants.	Vocabulary Card Sets/Word Chants http://wordgen.serpmedia.org/t_elem.html	Cards contain photographs & student-friendly definitions. Word Chants: Say the target word; clap syllables; shout syllables; spell the word; say the target word two more times.
	Watch Action News.	Access Action News online & project for students to view.	Action News Video http://wordgen.serpmedia.org/action_news	Students watch & listen as Sharon Wright and Reid Moore discuss the unit's topic and target words in the context of a news report.
	Discussion Question.	Use the discussion questions to further explore the unit's topic with a partner or small groups.	Online Lesson Plans http://wordgen.serpmedia.org/t_elem.html	What groups in your community help people in need?
Day 2	Readers Theater	Model fluent reading. Students re-read with partners. Highlight target words.	Online Lesson Plans http://wordgen.serpmedia.org/t_elem.html	Four characters discuss what it means to belong to a community.
	Perspective Cards	Determine character's perspectives as represented in the Readers Theater.	Guidelines and graphic organizers provided within online lesson plans.	Students determine each character's perspectives and decide which characters represent their own perspectives.

Table 1 (continued)

	Lesson Components	Procedures	Resources	Examples
Day 3	Word Study Chart	Use word definitions, Turn & Talk, pictures, word forms, and fun word facts to build understanding of target words.	Word Charts provided in online lesson plans. http://wordgen.serpmedia.org/t_elem.html	To further understand the target word, <i>common</i> , the Turn & Talk question asks: “What are some <i>common</i> punishments for misbehaving in school?”
	Word Study: Multiple Forms	Use teacher-created word study charts for exploring multiple forms of the target word.	Use <i>Words Their Way</i> (Bear et al., 2016) as a resource for creating word study charts that examine how words change from one form to another.	For instance, the chart may focus on verbs that end in the letters –te, but are changed to nouns when the final ‘e’ is dropped and the suffix –ion is added. For example, <i>migrate</i> becomes <i>migration</i> .
Day 4	Journeys & Journals (Hester)	Over the course of each unit, the students read a journal entry from the perspective of Hester, a fictional 10-year-old Puritan girl. Each journal entry incorporates the target words as well as the unit’s theme (i.e., community).	Journal entries and follow-up discussion and writing activities are include in online lesson plans. http://wordgen.serpmedia.org/t_elem.html	For example, part of the journal entry reads “How could I leave...this is my home...the place where I belonged my whole life” (SERP, 2009). Discussion would then focus on the following Turn & Talk question: Why is Hester leaving her local community? How does Hester feel about leaving?
Day 5	Article & Discussion	Students read a non-fiction article that connects to Hester’s fictional journal. Discuss the similarities and differences between the two types of texts.	Articles and follow-up discussion and writing activities are included in online lesson plans. http://wordgen.serpmedia.org/t_elem.html	Article entitled “ <i>Who were the Puritans?</i> ” provides information about the Puritans and why they left England in the 1600s.
	Quick True/False Assessment	Assess students’ knowledge of target words and connected word forms after five days of instruction. This data can be used to guide future instruction.	Use <i>Bringing Words to Life</i> (Beck, McKeown, & Kucan, 2013) as a resource to create vocabulary assessments that assess deep-processing of target words and connected word forms.	For example, to assess students’ knowledge of the target word <i>global</i> and its connected word forms you might ask, “If a company <i>globalizes</i> their business, it means that the business extends across the world.”

Table 1 (continued)

	Lesson Components	Procedure	Resources	Examples
Day 6	Prepare to Debate	<p>Debates center on controversial issues that align to the units' topics.</p> <p>Students spend the sixth-day preparing to debate by discussing the unit's topic and determining their stance. Based on their stance, the class is then divided into two debate teams. Using a graphic organizer, the students work with their team to determine their position; three main arguments; possible counterarguments; and concluding statements.</p>	<p>WG lessons provide the framework for the debates. This framework is established within the Readers Theater, on Day 2, by discussing the characters' perspectives. By Day 6, the students have discussed the topic in enough detail that they are able to develop their own perspectives.</p> <p>WG provides graphic organizers within the online lesson plans, but it is recommended to use a graphic organizer that explicitly outlines the components of a debate. A simple Google search should provide teachers with this resource.</p>	<p>For example, in Unit 5.1, the lesson plan includes two short paragraphs describing two schools: Manual Elementary and Dali Elementary Arts Academy. Manual represents a school that values technology, structure, academics, and assessments. In contrast, Dali represents a school that focuses on the arts and cooperative learning. The students use these paragraphs to determine their own stance and to develop an effective argument.</p> <p>In this study, the following components were included on the graphic organizer: (1) position/thesis, (2) three reasons to support your position, (3) two possible counterarguments, (4) two rebuttals, and (5) concluding statements.</p>

Table 1 (continued)

	Lesson Components	Procedures	Resources	Examples
Day 7	Debate	<p>Prior to each debate, it is important to review discussion/debate norms.</p> <p>Holding the debate: each debate team was made up of three students.</p> <p>The remaining three students served as the debate judges. Every student had the opportunity to be a judge. As judges, the students were to evaluate their peers using a debate rubric. Additional or optional debate rubrics.</p>	<p>At the onset of the study, the students created discussion norms as a class. These norms were posted in the classroom as a reminder and quick reference. Teachers should refer to these norms often.</p> <p>In this study, the debates were highly-structured and scaffolded by the teacher.</p> <p>Debate Rubric: WG provides a debate rubric on the SERP website under the “Additional Resources” tab. http://wordgen.serpmedia.org/t_elem.html</p> <p>A Google search provided access to a “Classroom Debate Scoring Sheet.” In this study, this format was used by the students to evaluate their peers.</p>	<p>Discussion norms should include what a discussion looks like, sounds like, and feels like. For example, your norms may state that discussions should look like group conversations that have a shared responsibility and occurs in a space where others feel safe sharing their ideas.</p> <p>For example, each student was paired with a student from the opposing team. The students were instructed to focus on what their opponent said in order to formulate an effective counterargument.</p> <p>This rubric assesses students’ arguments from ineffective to highly-effective.</p> <p>This rubric assesses the debates on a scale of 1 to 4 and examines five different areas: (1) organization and clarity, (2) use of arguments, (3) use of examples and facts, (4) use of rebuttal, and (5) presentation style.</p>

Table 1 (continued)

	Lesson Components	Procedures	Resources	Examples
Day 8	Critique of Debates	<p>Each debate was video recorded and played back for the students to view on Day 8.</p> <p>After viewing the debate, the class engaged in a discussion to determine strengths and weaknesses of the debate.</p> <p>The evaluation panel or judges share their feedback and determine the “winner” of the debate.</p>	<p>Ask questions that encourage the students to discuss and evaluate the effectiveness of the debate.</p> <p>Allow the students to share their thoughts with the group and announce who they felt made the stronger argument.</p>	<p>To start a discussion about the quality of the debate, you might ask the following questions: <i>Did our class do a good job following the discussion norms? Were we able to use the focus words? Did everyone have a chance to participate?</i></p> <p>Students often articulated that they chose the winning team due to that team’s ability to clearly state their position and defend it with facts.</p>
Day 9	Prepare to Write	<p>The writing activities are an extension of the classroom debates. Within each unit, the students create an argumentative essay to reflect their position on the debate topics.</p> <p>On Day 9, the students complete a graphic organizer that states their position and three reasons to support their position.</p>	<p>WG online lesson plans provide connected writing activities. However, you may choose to create your own connected writing activity such as an argumentative essay.</p> <p>Teacher-created or student-created graphic organizer (i.e., web).</p>	<p>For example, Unit 5.1, used this question to guide students’ essays: <i>Which school community (Manual or Dali) would you rather belong to? Why?</i></p> <p>Students can write their position in the center circle of the web and then draw three more circles in which they state their supporting arguments.</p>

Table 1 (continued)

Lesson Components	Procedures	Resources	Examples
Day 10 Write	The student’s goal will be to write a single introductory paragraph that clearly states their position and three reasons to support their position. This paragraph will look similar to the statements made by the “opening presenter” in the debate. Students should be encourage to use target words in their writings.	Argumentative Writing Rubric: WG provides a rubric for assessing students’ argumentative writings. The rubric can be found on the SERP website under the “Additional Resources” tab. http://wordgen.serpmedia.org/t_elem.html	This rubric assesses the writings on a scale of 1 to 4 and examines four different areas: (1) argument, (2) evidence, (3) organization, and (4) language.
Quick True/False Assessment	Assess students’ knowledge of target words and connected word forms after ten days of instruction. You can reuse the true/false assessment from Day 5 by administering the test questions in a different order.	Use <i>Bringing Words to Life</i> (Beck, McKeown, & Kucan, 2013) as a resource to create vocabulary assessments that assess deep-processing of target words and connected word forms.	For example, to assess students’ knowledge of the target word <i>support</i> and its connected word forms you might state, “A <i>supportive</i> person is helpful to others during difficult or unhappy times.”

The WG resources described in Table 1 address the following features of effective vocabulary instruction: (a) student-friendly definitions, (b) multiple exposures, (c) multiple contexts, (d) deep processing, (e) emphasis on high-utility academic language, (f) text-based approaches, (g) engagement in structured discussions, and (h) engagement in writing tasks (Beck et al., 2013; Beck & McKeown, 1991; 2007; Baumann & Graves, 2010; Ford-Connors & Parator, 2015; Lawrence et al., 2015; Lesaux et al., 2010; McKeown et al., 1985; Naggy & Hiebert, 2010; Naggy & Townsend, 2012; Perfetti, 2007; Perfetti & Hart, 2002, Perfetti & Stafura, 2014; Snow et al., 2009; Stahl, 1986; Yonek, 2008). For instance, the WG program

centers on all-purpose academic words that are “widely used in academic discourse and across disciplines” (SERP, 2009). These high-utility academic words are taught using student-friendly definitions, which are defined through the WG vocabulary cards. Furthermore, the instructional plans and corresponding materials strategically incorporate target words from current and past units in order to ensure multiple exposures to the target words in various contexts. WG uses a text-based approach by incorporating the target words into multiple texts (i.e., Actions News script, Readers Theater, Hester’s journal; informational article).

Additionally, the program promotes engagement in structured discussions by centering units on controversial topics and integrating discussion questions (i.e., Turn & Talk). The debate component also encourages discussion. WG incorporates writing in the form of responses to questions as well as the composition of argumentative essays. Finally, the WG program emphasizes deep processing of words through the word study charts. These charts examine the morphological features (i.e., polysemy, Greek/Latin roots, cognates, etc.) of target words and related word forms. Thus, each feature of WG was intentionally designed to reflect the theoretical perspectives and findings of current vocabulary research.

3.3 QUANTITATIVE DATA SOURCES AND ANALYSIS

3.3.1 Pretest, posttest, delayed posttest.

The influence of the intervention on students’ vocabulary learning was assessed using a 48-item multiple-choice test. Each of the 24 target words were assessed using two questions. The assessment was not reflective of a traditional multiple-choice test (i.e., matching target words to

definitions; synonyms; antonyms). Instead, the assessment evaluated students' depth of knowledge by asking multipronged questions. Table 2 provides an example of the type of questions and answers presented on the pretest, posttest, and delayed posttest.

Table 2 Example Questions for Multiple Choice Assessments

Target Word	Question/Prompt	Answer Choices
motive (n.)	Police have ruled out robbery as a motive for the killing. A motive is...	a feeling of strength or power. a reason for doing something. an excuse to behave badly. a way to make others feel determined.
motivate (v.)	What might someone who is trying to motivate you say?	You can do this. That is terrible. Give up. You'll never make it.
significant (adj.)	The hurricane caused a significant amount of damage. Several homes were flooded or without power. Significant is a word that describes...	a type of storm. something that is large enough to be important or make a difference. something that needs to be fixed. something that is small enough to be unimportant.
significant (adj.)	Is a million dollars a significant amount of money?	yes no
global (adj.)	A global concern, is a fear that...	only affects the United States. only affects other countries. affects the entire world. has no effect.
global (adj.)	Does global mean worldwide?	yes no

The pretest was administered prior to the intervention. At the conclusion of the intervention, the posttest was administered. The same questions were presented on the pretest and posttest; however, the order of the questions were altered. The pretest and posttest compared

students' knowledge of the target words before and after the intervention. The delayed posttest was administered three weeks after cessation of the intervention. Results of the pretest and posttest were analyzed using a paired *t*-test. Similarly, the results of the posttest and delayed posttest were analyzed using a paired *t*-test.

3.3.2 Word wizard tally chart.

The word wizard tally chart served as a positive incentive aimed at encouraging students to become “word-conscious” learners. The chart was displayed at the front the classroom. The chart contained the names of each student and an open area to record students' tally marks. Students earned tally marks by reporting the target words they heard or saw outside of the classroom. The students were required to provide “evidence” to support their claim. By this I mean, the students had to explain where and how the word was used in order to receive a tally mark. For example, one student stopped me in the hallway to tell me that the chorus teacher said the word *local*. I asked how it was used and the student responded, “Ms. Canon (pseudonym) said we are having a pizza party and that she'll be ordering from a *local* pizza shop.” This student received a tally mark for consciously recognizing the target word *local* outside of the classroom.

Students received a reward once they obtained five tally marks. Before the study began, the students and I created a list of rewards. Co-creation of the list is an important step in helping the students to feel invested. The rewards included popcorn, eating lunch in the classroom, and listening to music.

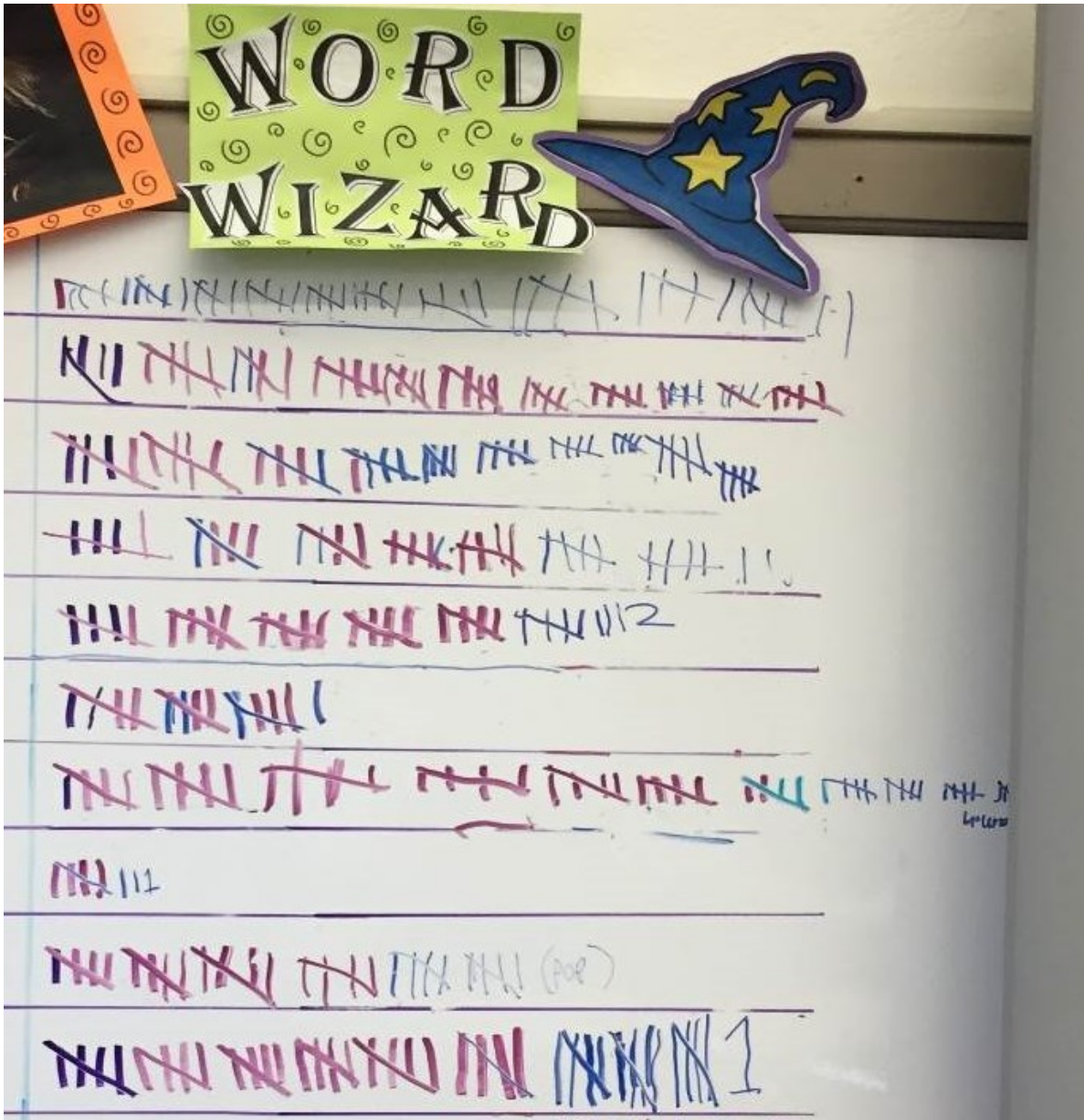


Figure 2. Photograph of the word wizard chart.

The word wizard chart as shown above was simple and maintained by the students. In short, the students were responsible for adding their own tally marks after receiving approval. The chart was analyzed to determine the frequency with which individual students were

consciously aware of target words outside of the classroom. The tally marks were totaled after seven weeks or at the end of the intervention.

3.4 QUALITATIVE DATA SOURCES AND ANALYSIS

3.4.1 Student artifacts.

The following data sources reflect artifacts generated by the students during the study. These artifacts included: (a) word study charts, (b) written sentences, and (c) argumentative essays. The students completed a word study chart for each unit including the introduction unit. Each word study chart focused on how words can change from one form to another. For example, *introduce* becomes *introduction*. The students had to identify the pattern of change (i.e., verb to noun) as well as the orthographic change (i.e., drop the final silent *e* and add the suffix *-tion*). Hence, the purpose was to guide students in discovering the patterns of English orthography as well as increasing their specific knowledge of words. Figure 3 provides a visual representation of a student's completed word study chart from the introduction unit.

WORD STUDY

INTRO. UNIT



Name: _____

Date: 10-19-16

Have you ever noticed how words can change from one form to another? For example:

produce becomes production

Complete the chart below. Then explain the pattern of change.

verb: word that describes actions, or connections	noun: word that names a result or process
produce: to make or create something	production: the process of making or creating something.
Write the words to complete the chart by filling in the blanks below. You don't have to write the meanings of the words.	
introduce	introduction
reproduce	reproduction
induce	induction
reduce	reduction
seduce	seduction

What's the pattern?

Verb ends in ce - e + tion = noun

Figure 3. Sample work of a student's completed word study chart.

After completing the chart, the students were asked to write two sentences that used the noun and verb forms of a word from the chart. For example, one student wrote “The teacher give us an introduction for our lesson.” This sentence appropriately uses the word *introduction* as a noun. The second sentence stated, “I would like to introduce you to someone, this is my friend Jazmine.” This sentence appropriately uses the word *introduce* as a verb. The word study chart and sentences were analyzed to gain insight into students’ abilities to recognize the patterns and conventions of English orthography as well as appropriately apply word forms in written contexts.

A final student artifact focused on students’ argumentative essays. Students created an argumentative essay that described their perspective on the unit’s controversial topic. The essays were an extension of the debate. For example, in unit two, the students wrote an essay stating their position on whether or not the Sudanese should be integrated into the community of Mapleville. Students’ essays were analyzed using an argumentative writing rubric that is part of the WG resources. The rubric evaluates four areas of the students’ writings: argumentation, evidence, organization, and language. Each category is scored on a scale of one to four (i.e., emerging, developing, proficient, and exemplary). A score of one is considered emerging and a score of four is considered exemplary. For example, in the category of *language*, if a student used the target words or related word forms incorrectly or not at all s/he would receive a score of one. By contrast, if a student correctly and consistently used the target words and related word forms s/he would receive a score of four. Thus, the rubric provided an objective measure for analyzing and evaluating the students’ abilities to effectively form arguments as well as appropriately apply target words in written contexts. Figure 4 is an example of a student’s argumentative essay. This essay is reflective of a *proficient* rating due to the student’s ability to

present a clear claim, which is supported by strong evidence. Additionally, the essay follows a logical order and displays correct and consistent use of the target words and related word forms within a written text. Table 3 mirrors the WG rubric used to evaluate the students' argumentative essays.

Dear Marietta Chronicle

I think the Sudanese should be integrated in the community activities. Mrs. Land is saying the Sudanese are being isolated from others. We need to change this so the Sudanese feel more integrated into the community. I think separating the Sudanese in their own classrooms keep them isolated from the school community. We need to change this so they can communicate with their English-speaking peers. The Sudanese are dependent on us so we should be considerate and move the town festival in order to integrate them. I hope you will consider being more supportive to the Sudanese.

Figure 4. Sample work of a student's argumentative essay.

Table 3 *WG Argumentative Writing Rubric (SERP, 2009)*

	Emerging (1)	Developing (2)	Proficient (3)	Exemplary (4)
Argumentation	The writing presents only a vague or confusing claim.	The writing presents a clear and relatively precise claim but provides little or no evidence or reasoning to support it.	The writing presents a clear claim and provides evidence to support it, but perhaps no clear articulation of reasoning relating the evidence to the claim.	The writing presents a clear claim, provides evidence to support it, and makes clear the reasoning relating the evidence to the claim.
Evidence	No evidence is presented.	Some appropriate evidence is presented.	Sufficient and compelling evidence is presented.	Sufficient and compelling evidence is presented, and evidence that counters alternative claims is included.
Organization	Claim, support, conclusion, and structure are absent.	The evidence presented is not linked to the claim; the conclusion simply restates the claim.	The claim, evidence and reasoning linking them are presented in a logical order, with a conclusion reiterating the reasoning.	The claim, evidence, and reasoning linking them are presented in logical order, and the conclusion effectively strengthens the claim by displaying the relationship.
Language	Academic language forms (including focus words) are used incorrectly, or not at all.	Academic language forms (including focus words) are attempted, but they are sporadic and mostly not correct.	Academic language forms (including focus words) are used frequently and mostly correctly, but not consistently.	Academic language forms (including focus words) are used correctly and consistently, except for cases where conversational language is used for specific effects.

3.4.2 Reflective notes.

I kept reflective notes about important events related to the intervention. The reflective notes documented various aspects of the intervention such as: (a) instructional practices, (b) activities completed or uncompleted, (c) students' learning, (d) areas for improvement, and (e) students' word wizard examples. The reflections were collected in a notebook and each entry was dated. The entries contained my personal thoughts on the day's interactions and lessons. The purpose was to immediately capture my thoughts in order to create a reliable data source that is reflective of the intervention from start to end. The notes were analyzed to determine recurrent patterns throughout the classroom sessions as well as to determine patterns in students' vocabulary learning.

3.4.3 Classroom interactions.

The majority of the classroom sessions were video recorded in order to capture students' use of target words within an oral context (i.e., discussions). A total of 24 hours of audio was obtained over the course of the intervention. Due to the size of this data source, I selected to transcribe a single lesson. I used the reflective notes as a guide for selecting the lesson to be transcribed. The selected lesson occurred midway through the intervention and focused on Day 3 of the instruction cycle (i.e., review of target words and word study activities). I selected this particular lesson because students had become accustomed to the WG routines and activities at this point in the intervention. Additionally, I selected the lesson due to its focus on target word meanings and word study activities. These activities are fundamental to the design of the WG program. The

transcription was analyzed to determine recurrent patterns throughout the classroom sessions as well as to determine patterns in students' vocabulary learning.

4.0 RESULTS

In this section, I report the results of the quantitative and qualitative data analysis. The quantitative analysis focuses on findings associated with the vocabulary assessments and word wizard tally chart. The qualitative analysis focuses on findings associated with student artifacts, reflective notes, and transcript episodes of classroom interactions. The purpose of the analysis is to report findings that address the research question: what are the outcomes of implementing an instructional intervention designed to support the vocabulary development of adolescent students who struggle with reading?

4.1 QUANTITATIVE ANALYSIS

4.1.1 Pretest, posttest, delayed posttest.

Each assessment included 48 multiple-choice questions that assessed students' understanding of 24 target words. I scored the assessments using a double-item rule. In other words, I only counted items related to a word as correct if students answered both items correctly. Thus, the maximum score on the pretest, posttest, and delayed-posttest was 24. Students' pretest and posttest scores were analyzed using a paired *t*-test in order to investigate the potential impact of the intervention on students' vocabulary learning. The results of the paired *t*-test revealed that the

average score on the pretest was 11 (46%) and the average score on the posttest was 19 (80%). These results also revealed that on average 13 of the 24 target words were unknown by the students at the onset of the study, while on average five of the 24 words were unknown by students at the conclusion of the study. Table 4 displays the results of the paired *t*-test.

Table 4 Mean Performance Scores on Vocabulary Assessments

	Pretest M (SD)	Posttest M (SD)	Delayed-Posttest M (SD)
Student Sample (N = 9)	10.7(4.30) *	19.0(3.97) *	17.2(4.71)

* $p < 0.0001$

NOTE: All assessments included 24 items.

As shown in Table 4, all students demonstrated statistically significant positive differences on the pretest/posttest. There were no statistically significant differences between the posttest and delayed posttest scores indicating that students had maintained their understanding of target word meanings as indicated by their delayed posttest scores.

I further analyzed students' assessments using a simple item analysis in order to determine which words were known by students. A word was considered "known" if students correctly answered both items related to the target word on the pretest, posttest, or delayed posttest. The analysis revealed that five of the 24 target words were known by six or more students prior to the intervention. In contrast, 23 of the 24 target words were known by six or

more students after the intervention. Table 5 presents the number and percentage of students who knew each target word before and after the intervention.

Table 5 Students' Knowledge of Target Words

Target Word	Pretest Words Known by Students (N=9) Number (%)	Posttest Words Known by Students (N =9) Number (%)	Delayed-Posttest Words Known by Students (N =9) Number (%)
comprehension	1(11)	6(67)	5(55)
integrate	1(11)	8(89)	8(89)
affect	1(11)	2(22)	1(11)
controversy	2 (22)	6(67)	6(67)
dependent	2(22)	7(78)	5(55)
current	2(22)	6(67)	5(55)
encounter	3(33)	6(67)	6(67)
significant	3(33)	6(67)	8(89)
local	3(33)	6(67)	4(44)
norms	3(33)	7(78)	5(55)
motive	3(33)	7(78)	6(67)
academic language	4(44)	7(78)	5(55)
obligation	4(44)	9(100)	5(55)
moral	4(44)	7(78)	8(89)
perspectives	5(56)	8(89)	6(67)
discussion	5(56)	8(89)	8(89)
global	5(56)	7(78)	7(78)
introduction	5(56)	7(78)	8(89)
respond	5(56)	8(89)	9(100)
communicate	6(67)	9(100)	9(100)
common	6(67)	8(89)	6(67)
isolated	7(78)	9(100)	8(89)
require	7(78)	8(89)	8(89)
support	8(89)	9(100)	9(100)

It is interesting to note that only the word *affect* was not learned by at least half of the students. Students were introduced to the word *affect* in the final unit of the intervention. Thus, the students' exposure to the target word was limited to two weeks. *Affect* was explained as a

verb that means “to have an influence on; to change” (SERP, 2015, p. 68). The WG resources provided the following question as a way for students think about the target word: “how does eating too much candy affect your teeth” (SERP, 2015, p. 68). The resources also asked students to determine which picture (a boy smiling or crying) represented a boy affected by a sad film. Furthermore, the WG resources pointed out that affect “...is a verb with a tricky related noun. If you affect something, you have an *effect* on it” (SERP, 2015, p. 68). The posttest presented the following test items to assess students’ understanding of the word affect.

- A lack of sleep affects how you feel the next morning, so affect means...
- If a tree is struck by lightning and splits in half, might someone say the lightning affected the tree?

The correct answer to the first test item was “to influence or change in some way.” Only two of the nine students answered this test item correctly. Four of the nine students selected the answer choice “to cause something to happen” while two students chose “to feel tired.” The students who answered incorrectly selected the answer choices that represented the word *effect* rather than *affect*. Interestingly, eight of the nine students correctly answered the second question. This question required students to answer “yes” or “no.” In short, the majority of the students correctly identified the word *affect* in the second question, but not the first.

The delayed-posttest was administered three weeks following the cessation of the intervention. The results revealed that 16 of the 24 target words were known by six or more students on the delayed-posttest. These results revealed that the majority of the students maintained an understanding of the target words beyond the intervention. It is interesting to note that the word *obligation* was known by 100% of students on the posttest while 55% of students knew *obligation* on the delayed-posttest. The students were exposed to *obligation* in the third or final unit. Thus, a high recognition of the word on the posttest may be attributed to its proximity

to the test administration. By contrast, a lack of recognition on the delayed-posttest may be attributed to limited encounters. By this I mean, fewer students may have known the word *obligation* on the delayed-posttest since it was introduced in the final unit and resulted in fewer encounters or opportunities to learn the word deeply.

4.1.2 Word wizard tally chart.

I conducted a quantitative analysis of students' tally marks to determine the frequency with which they recognized target words outside of the intervention. The purpose was to investigate the potential impact the intervention had on developing students' awareness of target words and related word forms in multiple contexts. Students' tally marks were recorded for 35 days, which was the length of the intervention. I then divided the tally marks by 35 to determine the average number of words recognized by students per day. Table 6 displays the number of occurrences or frequency with which students recognized target words in contexts unconnected to the intervention.

Table 6 *Frequency of Word Recognition Outside of the Classroom*

	> 1 Word Per Day	1 Word Per Day	< 1 Word Per Day
Students (N = 9)	1	7	1

As shown in Table 6, seven of the nine students recognized one word per day, while one student recognized three words per day. Another recognized less than one word per day. Overall, eight of the nine students demonstrated an awareness of target words and related word forms in contexts outside of the intervention.

The next step in analysis focused on determining the specific target words and sources identified by students. Using my reflective notes, I totaled the number of times each of the 24 target words were provided by students as well as the sources in which they heard or saw the words. Table 7 represents the number of times each target word was provided by the students for the word wizard component of the intervention.

Table 7 Recognition of Target Words Outside of the Classroom

Word	Total	Word	Total
Introduction Unit		Unit 1	
introduction	14	communicate	59
comprehension	5	respond	13
academic language	0	local	30
perspectives	18	common	8
discussion	28	global	7
norms	15	support	30
Total	80	Total	117
Word	Total	Word	Total
Unit 2		Unit 3	
encounter	2	obligation	2
isolated	17	moral	1
require	20	current	6
integrate	8	affect	9
controversy	3	motive	4
dependent	6	significant	3
Total	56	Total	25

As shown in Table 7, the words most frequently provided by students included: *communicate*, *support*, *local*, *require*, and *discussion*. It should be noted that three of these five words (i.e., *communicate*, *require*, *support*) were known by more than 60% of the students prior

to the intervention. In contrast, two of these five words (i.e., *local*, *discussion*) were known by less than 60% of the students prior to intervention. A commonality among all five of the most-frequently recorded words is that the number of students who understood these words increased from pretest to posttest. For instance, three more students knew the words *communicate*, *local*, and *discussion* on the posttest compared to the pretest. Similarly, seven students demonstrated an understanding of the words *support* and *require* on the pretest, while eight students demonstrated understanding on the posttest.

The words *isolated*, *perspectives*, and *respond* were provided more than ten times over the course of the intervention. Students' knowledge of these words also improved from pretest to posttest. Furthermore, two of the most recorded words (i.e., *communicate*, *support*) were the same words that 100% of the students correctly identified on the posttest. The word *isolated* was also suggested multiple times and correctly identified by all students on the posttest. On the other hand, the word *obligation* was provided only two times, but was correctly identified by all students on the posttest.

A final finding associated with the most-frequently recorded words relates to the point at which the target words were introduced. By this I mean, the unit in which the words were presented and the length of time that students had to recognize the target words. For example, students had seven weeks to recognize target words presented in the introduction unit and six weeks to recognize words presented in unit 1. Target words presented in unit 2 allowed for recognition over four weeks while unit 3 allowed for recognition over two weeks. From this perspective, the analysis revealed that students reported hearing and seeing target words from the first three units with greater frequency than the final unit.

The word wizard data was further analyzed to determine the sources in which students identified target words. Table 8 displays the sources in which students claimed to have heard or seen the target words.

Table 8 *Target Word Sources*

Sources	Total	Sources	Total
Overheard Comment	110	Movie	6
Conversation	46	Video Game	5
Text	43	Radio	2
Television	30	Music	1
Video	23		

As shown in Table 8, the most frequently cited source in which students identified target words was “overheard comments.” Of these 110 comments, 43 were cited as overheard comments made by other teachers. In other words, 39% of the largest source was attributed to words students heard in other academic settings (i.e., math, science, social studies, STEAM, art, music, etc.). The second largest source cited was “conversations.” Students claimed to recognize a parent, peer, or teacher using target words in conversations in which they were a participant. Additionally, some students claimed to have used the target words in a conversation with a parent or peer.

Another noticeably large source was “text.” This category included the following text sources: (a) books, (b) social media, (c) billboards, (d) posters, (c) rubrics, (d) essay questions, (e) advertisements, (f) newspapers, (g) content-area assessments, (h) content-area worksheets,

and (i) newsletters. Of these 43 text sources, 77% were recognized in academic text materials (i.e., math assessments, science worksheets, social studies worksheets, and chapter books). A final category of importance is the “video” category. Students claimed to have recognized target words 23 times in videos. Of these 23 video sources, 14 were cited as educational videos. In other words, 61% of the target words identified were recognized in videos presented in academic settings (i.e., library, science, social studies, and STEAM). It is important to note that students also reported recognizing target words outside of academic settings. These sources included: television, radio, movies, video games, and music.

4.2 QUALITATIVE ANALYSIS

4.2.1 Word study charts.

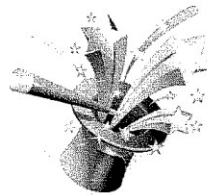
I analyzed students’ word study charts and sentences to gain insight into their abilities to recognize patterns and conventions of English orthography as well as appropriately apply word forms in written contexts.

As shown in Figure 5, the word study charts consisted of the noun and verb forms of the target vocabulary words as well as sentences making use of those forms. These were completed as a class activity. That is, the students and I worked together to identify the pattern of change and fill in the chart. This allowed for clarification of any misconceptions that were brought to my attention. For example, Paige stated that she was confused with the word *motivate* while completing the chart. Several students responded to Paige by clarifying the rule “you have to drop the ‘e’ and add –ion” (December 8, 2016).

Thus, the word study charts focused on how words can change from one form to another. For instance, *motivate* becomes *motivation*. The students had to identify the pattern of change (i.e., verb to noun) as well as the orthographic change (i.e., drop the final silent *e* and add the suffix *-ion*) to complete the chart. Next, the students had to use the noun and verb forms of a word from the chart to create two “spectacular sentences.” Figure 5 illustrates Nevaeh’s completed word study chart.

WORD STUDY

UNIT 3



Name: _____

Date: 12/7/14

Have you ever noticed how words can change from one form to another? For example:

create becomes creation

Complete the chart below. Then explain the pattern of change.

verb: word that describes actions, or connections	noun: word that names a result or process
create: to make or produce something	creation: the result of making or producing something
translate: to express words in a different language	translation: the process of translating something into a different language
Write the words to complete the chart by filling in the blanks below. You don't have to write the meanings of the words.	
<i>celebrate</i>	celebration
communicate	<i>communication</i>
integrate	<i>integration</i>
motivate	<i>motivation</i>
<i>isolate</i>	isolation

What's the pattern?

verb - e + ion = noun

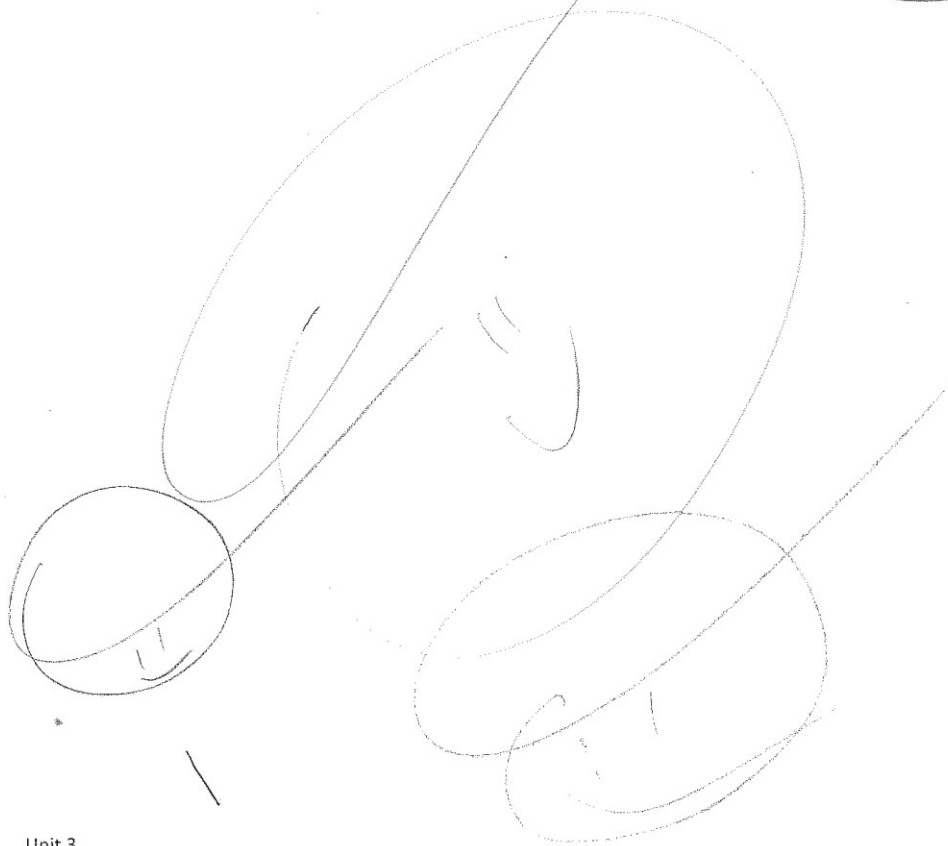
Unit 3

✓ 1. Pick a ^{verb} ~~noun~~ from the chart above and write a **SPECTACULAR** sentence.

My friend and I use to
communicate all the time.

✓ 2. Pick a ^{noun} ~~verb~~ from the chart above and write a **SPECTACULAR** sentence.

I think social media is a
stupid form of communication.



Unit 3

Figure 5. Nevaeh's completed word study chart.

A review of students' word charts across all units revealed that all students except one correctly identified the patterns of change for the words on the charts. This is an indication that students were attentive to the class discussion about how words were changed from one form to another and were able of capturing those changes on their word study charts.

4.2.2 Sentences.

The next step in analysis focused on determining students' abilities to correctly apply word forms within written contexts. The students were to write one sentence that used the noun form of a vocabulary word and one sentence using the verb form.

I compared students' sentences across all units. This analysis revealed that students' abilities to correctly apply word forms in written contexts positively progressed from the beginning to the end of the intervention. That is, it was common for students to inaccurately apply the word forms within sentences during the introduction unit. For example, Tyler wrote the following sentence for *seduction*: "The witch seduction me to fall for her trick." In this sentence, he used *seduction* as a verb instead of a noun. Tyler was able to create the following sentence in a later unit "There is a lot of *pollution* in the air because of car engines." Other students demonstrated a similar trend in which they improved upon their ability to use the noun and verb forms of words correctly within written contexts. By the last unit, all students correctly applied the word forms into written sentences. Examples of student sentences from unit three are listed below:

- Ashlyn wrote: "We are having a *celebration* for my sister's birthday."
- Jonathan wrote: "We need to *celebrate* these global events more often."
- Elliott wrote: "We can *celebrate* in a local community."

- Kaitlyn wrote: “The team *communicates* by e-mail.”
- Norah wrote: “My *creation* is a robot.”
- Paige wrote: “I got *isolated* from Nevaeh.”
- Nevaeh wrote: “I think social media is a stupid form of *communication*.”
- Phillip wrote: “My mom put me and my cousin in *isolation*.”

I examined the students’ sentences a step further in order to investigate whether or not students incorporated additional target words. By this I mean, I wanted to determine if students incorporated target words not included on the word study chart into their sentences. For example, Kaitlyn wrote the following sentence for the word *pollution*: “In our local community we are scared of global pollution.” She correctly applied *pollution* as a noun, but also incorporated three additional target words: *local*, *community*, and *global*. Paige, Nevaeh, Elliott, and Jonathan also incorporated additional target words within their sentences. However, only Elliott incorporated additional target words on a consistent basis. Ashlyn, Norah, Tyler, and Phillip did not incorporate additional target words in their sentences.

4.2.3 Argumentative essays.

A final artifact focused on students’ argumentative essays. The WG rubric provided an objective measure for analyzing and evaluating students’ abilities to effectively form arguments as well as apply target words in written contexts. I selected to analyze students’ essays from the second and third unit since the essay from unit one was highly scaffolded. The second and third unit essays were more reflective of the students’ independent work.

I first evaluated and assigned a rating to each student's essay using the WG rubric (see Table 3). The students' essays ranged in ratings from *emerging* (1) to *proficient* (3). None of the essays were rated as *exemplary* (4).

Students who received a rating below *proficient* shared commonalties among their essays. These commonalties included: (a) unclear arguments, (b) weak reasoning, and (c) minimal use of target words. Consider the example in Figure 6, Kaitlyn's unit two essay, which was scored as *emerging* (1).

Dear mapleville Chronicle

my position is that they should be included
so they don't feel isolated. It's a good
thing they are included in soccer. But they should
be in more activities. They should be able to
spend more time in their classrooms
with their class mates although
they should still keep going to
the class by themselves to learn
English quickly. Also they should
move the festival so they can still
have their holiday.

Sincerely,

+1/4

emerging

Sincerely,

Figure 6. Student example of an *emerging* (1) essay.

As shown in Figure 6, Kaitlyn states a vague or confusing claim, “My position is that they should be included so they don’t feel isolated.” Readers do not understand who “they” is in this position statement. Also, Kaitlyn’s position statement leaves the reader questioning where she feels “they” should be included. The audience does not understand that Kaitlyn is referring to the Sudanese who recently moved into a new community. Her evidence is weak and confusing without this understanding. Furthermore, Kaitlyn’s essay lacks structure and organization. She states three main reasons to support her position, but does not elaborate on these reasons. Thus, her essay jumps from one reason to the next without explanation or organization, which leaves readers confused and unclear of her argument. She also neglected to include a conclusion statement. Lastly, Kaitlyn incorporated a single target word, *isolated*, in her essay. The features described above reflect a score of 1 out of 4 on the WG rubric. Thus, Kaitlyn’s essay earned an *emerging* rating.

In contrast, students who received a *proficient* rating shared the following commonalities: (a) clear arguments, (b) strong reasoning, and (c) moderate use of target words. Consider the example in Figure 7, Elliott’s essay, which was scored as *proficient* (3).

Dear Mapleville Chronicle

I think the Sudanese should be integrated in the community activities. Mrs. Land is saying the Sudanese are being isolated from others. We need to change this so the Sudanese feel more integrated in to the community. I think separating the Sudanese in their own classrooms keep them isolated from the school community. We need to change this so they can communicate with their English-speaking peers. The Sudanese are dependent on us so we should be considerate and move the town festival in order to integrate them. I hope you will consider being more supportive to the Sudanese.

Sincerely,

+3/4 proficient

(11 target words)

Figure 7. Student example of a proficient (3) essay.

As shown in Figure 7, Elliott states a clear claim and provides evidence to support it. Elliott states, "I think the Sudanese should be integrated in the community activities." This position statement allows readers to easily understand the focus of the essay as well as Elliott's

stance. Furthermore, Elliott provides sufficient evidence that is clearly linked to his position statement. For instance, each piece of evidence connects back to the idea of “community” and the need to integrate the Sudanese into these different communities. Elliott’s essay is presented in a logical order, which allows readers to make sense of his argument. He also includes a conclusion statement that reiterates his stance. Finally, Elliott correctly and consistently used target words in his essay. The features described above reflect a score of 3 out of 4 on the WG rubric. Thus, Elliott’s essay earned a *proficient* rating. Table 9 shows student ratings for essays from the second and third units.

Table 9 Essay Ratings from Units Two and Three

Student	Unit 2 Rating (Score)	Unit 3 Rating (Score)
Kaitlyn	Emerging (1)	Developing (2)
Paige	Emerging (1)	Developing (2)
Phillip	Developing (2)	Proficient (3)
Tyler	Developing (2)	Proficient (3)
Jonathan	Developing (2)	Proficient (3)
Ashlyn	Proficient (3)	Developing (2)
Elliott	Proficient (3)	Proficient (3)
Norah	Proficient (3)	Proficient (3)
Nevaeh	Proficient (3)	Proficient (3)

As the table shows, five students increased one rating level (i.e., *developing* to *proficient*) from unit 2 to unit 3. However, one student decreased a rating level while three students maintained a *proficient* rating across both units.

Students who improved by one rating level demonstrated a greater ability to formulate clear claims linked to evidence while also consistently and accurately incorporating target words

into their writing. For example, Tyler received a *developing* rating on his unit two essay. The essay received this rating because the writing did not clearly link evidence to the claim and included two target words. It should be noted, that *consider* was mistakenly counted as a target word in Figure 8. The word *consider* was not introduced until a later unit. In contrast, Tyler's unit three essay received a *proficient* rating. It received this rating because the writing presented a clear claim linked to sufficient evidence as well as included six target words. Figure 8 and 9 illustrate Tyler's essays from each unit.

Dear Chronicle Editor

I think the Sudanese should be integrated in the same class with others because it would help them learn English. If the Sudanese are not in class with others they won't make friends to play with or to eat lunch with. The Sudanese should be included more like in the town fair because we want them to feel like they are at home. I really hope you can consider moving ^{not} ^{into} ^{yet} the town fair to integrate the Sudanese into our community.

Sincerely,

+2/4

Developing

3 target words

Figure 8. Tyler's unit two essay.

Day 10

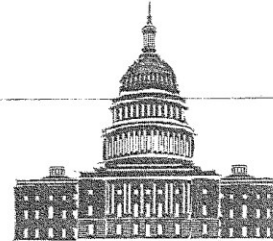
obligation • moral • current • affect • motive • significant

Writing, continued

Why should I care?

Write your own letter to Representative Jones. Be sure you cover the following points in your letter:

- Who do you think is responsible for cleaning up the debris that will hit the shoreline of Oregon?
- How would you feel about having to pay taxes for the cleanup if your state wasn't affected?
- Use an example from the unit or your own life to help support your argument.



Dear Representative Jones,

I think it's our nation's moral obligation to help clean up the debris that will hit the shoreline of Oregon. I think this because our nation is dependent on everything. The idea of having to pay taxes for the cleanup causes me to feel supportive. I feel this way because if my state helps Oregon then it won't offset my contribution. It is important to help clean up the debris even if my state wasn't affected because if we don't clean up debris the fish supply will be smaller. For example, the debris can cause the fish to die. This means that our nation will have to pay more for fish.

Sincerely,

- Now, check your writing. Did you...
- Make clear your own opinion about the issue?
 - Give reasons to support your opinion?
 - Include focus words to make your writing stronger?

SERP © 2015

3/4 proficient

Unit 5.03

6 target words
affect - 2x - correct

84

Figure 9. Tyler's unit three essay.

The ability to state and defend a claim and to use target words was a shared theme across students' writings. In other words, most students demonstrated positive developments in their abilities to write effective arguments and apply target words with greater frequency and accuracy to written text.

4.2.4 Reflective notes.

I kept reflective notes about important events related to the intervention. The notes were analyzed to determine recurrent patterns throughout the classroom sessions as well as to determine patterns in students' vocabulary learning. I developed a set of initial codes that included the following: (a) discussion-related, (b) writing-related, and (c) word consciousness.

Next, I applied the codes to comments in my reflective notes. As I analyzed my notes, the codes of discussion and word consciousness became most frequent. I further refined these codes into (a) hesitation around discussion and (b) development of word conscious learners.

Hesitation around discussion was an important aspect of student participation. The students seemed to lack the familiarity or understanding of how to engage in effective discussions. During the first week of the intervention, the students engage in a "mock discussion." Engagement in this mock discussion occurred after the class and I co-created a list of discussion norms. The purpose was to practice engaging in a discussion while also adhering to the norms. I posed the following question: "Should petitions by kids be taken less seriously than petitions by adults?"

I informed the students that they were going to engage in a practice discussion. I reminded the students to be conscious of the norms we created. The discussion norms outlined what a discussion should look, sound, and feel like. For instance, the students and I decided that

a discussion should feel like a conversation with shared responsibility. We also agreed that a discussion should include quiet, but equal voices. Lastly, we agreed that a discussion should feel productive and safe. By safe, I mean a conversation in which students felt comfortable sharing their ideas. I informed the students that I would be observing their interactions and adherence to the discussion norms.

I gave the students three minutes to discuss the question posed above within their small groups. During the three minutes, I recognized that most students appeared unaware of how to effectively engage in discussion. Most groups allowed each member to state their opinion and then the discussion ceased. The students seemed to lack the ability to give feedback, challenge, or make connections among their peers' perspectives. Instead, they simply allowed their peers to "speak their piece" and considered the discussion over. In fact, I observed two students who stated their opinion and then physically removed themselves from the group. One student needed a tissue while the other student removed herself to get hand sanitizer.

The observations made during the "mock discussion" carried over into the subsequent units. By this I mean, the students continued to treat the discussions as a platform to state their personal opinions without engaging with their peers' perspectives. My reflective notes stated, "Students are not 'pushing back' or challenging peer's perspectives or interacting with the idea of multiple perspectives" (October 19, 2016).

However, I noted a marked shift in students' discussions mid-way through the intervention. The discussions progressed from single statements into conversations. In other words, most students transitioned their discussions to comment on or question others' ideas versus simply stating their own ideas. Additionally, students' discussions positively progressed

to the point that students' responses included explanations as well as occasional academic words and phrases.

The following are students' responses from transcripts mid-way through the intervention (November 14, 2016). The discussion question focused on the following: "Can you think of a time when you felt isolated from your friends or family?" The responses show connections among others' responses as well as responses that incorporate the target word *isolated*.

- Norah: "I had to go sleepover at my dad's in Pittsburgh. When I was probably nine or ten. And I was having a sleepover and I had to go with my dad. I was *isolated* from my mom and I started crying."
- Kaitlyn: "I feel *isolated* from my family most well all of the time because my dad is either watching TV or sleeping or on the computer and my brother plays on his Xbox and my mom works at night."
- Ashlyn: "Um, I told Kaitlyn that it was two or three weeks ago. I was at a Halloween party with my cousin's cause it was at her dad's house. And her cousins were over and I felt *isolated* because they left me out of everything they did."
- Tyler: "I feel *isolated* when my friends come over and they go into my sisters room to play and I'm alone."

Norah discussed a time when she had to leave her mother and spend the weekend at her father's house. She discussed that she felt isolated from her mother during this stay. Kaitlyn related to Norah's comment about feeling isolated from family members. Thus, she commented that she feels isolated from her family on a regular basis because her mother works evenings and her father and brother seem to be preoccupied. Ashlyn shared that she felt isolated from her cousins at a Halloween party because they excluded her from activities. Markus shared that he had a similar experience when his friends came over, but spent the entire time playing with his sister instead of him.

A final observation focused on the number of students participating in discussions. A few students seemed to dominate the discussions at the onset of the study. However, within weeks most students were participating in small group and classroom discussions.

The second category that emerged from my notations centers on word conscious learners. Basically, the students demonstrated a heightened awareness of the target words and related word forms both inside and outside of the classroom. I addressed students' word consciousness outside of the classroom in the quantitative results (see Table 7). In this section, I discuss students' word consciousness within the classroom.

Students did not draw attention to instances in which they heard or saw target words during the introduction unit. However, students gradually began to draw attention to such instances within unit one. For example, Elliott recognized the target word *community* while reading Hester's journal and immediately raised his hand to share his discovery. I observed an increase in students' word awareness as we progressed through unit two. Students started consistently recognizing when I or other students used target words when speaking. Furthermore, students began to point out target words embedded in text. By unit three and four, it became a common occurrence for students to shout out the target words being heard or read. For example, if I used the target word *discuss* when speaking, students responded "Hey! You said discussed!" The students' word awareness became so heightened that it was often difficult to complete sentences (containing target words) without multiple interruptions. Students also demonstrated awareness of words by actively underlining or circling words in the WG resources as well as verbally expressing their excitement when seeing words in text. For example, many students raised their hands in a chorus of "ooh and aah" when they recognized a target word.

Students displayed an increase awareness of words in others' speech and text, but rarely incorporated the target words into their own speech and writing. One note from unit two was, "I am still encouraging students to use target words more often in their own speech and writing" (November 7, 2016). Elliott, however, attempted to incorporate target words into his speech and writing earlier than others. For instance, he used the target words *integrate* and *community* in his opening statement during the second debate. Elliott stated, "We think everybody should be included and should be integrated into community activities because you need to give the people an opportunity to try to learn English and fit in." By the end of unit two, I observed more students using target words in their own speech.

I did not include comments related to writing in my reflective notes except to note that students continued to neglect target words in their writing. It should be stated that I am not referring to students' essays. Instead, I am referring to the sentences students created on their word study charts as well as sentences written in their WG binders. The neglect of target words in daily writing activities remained an area of weakness for most students across the intervention.

4.2.5 Transcript episodes of classroom interactions.

Using my reflective notes as a guide, I selected a lesson midway through the intervention to transcribe. I analyzed the transcript to identify interesting episodes. Three interesting episodes occurred: (a) exchanges centered on cognates, (b) the use of technology to locate synonyms and antonyms, and (c) recognition of target vocabulary in reading.

The first episode focuses on exchanges among the students and me as we discussed cognates for the target word *dependent*. I asked the students to consider where we could find cognates. Elliott suggested checking the dictionary. Tyler recommended a Spanish dictionary.

Nevaeh thought we should consult Phillip since he speaks both English and Spanish. Ashlyn suggested we use the internet. Ashlyn provided the answer I was seeking. Thus, I opened Google and said, “I am going to type in...” Before I could finish my thought, Ashlyn interjected “Spanish word for dependent.” I suggested that we search “Spanish *cognate* for dependent” instead of “Spanish *word* for dependent.” This prompted Jonathan to question the meaning of cognate. I explained that cognates are related words from different languages.

The Google search was displayed on the SmartBoard. I highlighted the Spanish cognate for *dependent* in blue (i.e., *dependiente*). I directed the students to record the highlighted word onto their graphic organizer. Elliott noticed another cognate on the screen. He said, “But there’s another one...it says de-pen-den-cia” (November 15, 2016). I did not immediately recognize where Elliott saw this word. Ashlyn, Tyler, and Kaitlyn attempted to direct my attention to the correct place on the screen. Once finding the cognate, I clarified that *dependencia* is the cognate for *dependency* not *dependent*. Elliott’s interactions unknowingly opened the discussion in a positive way. By this I mean, Elliott allowed us to consider various forms of the target word as well as the associated cognates.

A second episode that proved to be interesting focused on the use of technology to locate synonyms and antonyms. I asked the students to identify a synonym for *dependent*. Jonathan suggested *reliable* as a synonym to *dependent*. I accepted this answer and asked students to record the synonym on their graphic organizer. To help students with the spelling of *reliable*, I opened a word document and typed the word. This led to a teachable moment in which I exposed the students to a “technology trick.” By this I mean, I shared with students how to use Microsoft Word to locate synonyms and antonyms. I demonstrated and stated, “If you right click on a word you can come down and hit ‘synonyms’ and it gives you some...” As I did this, Phillip interjected

“Oh yeah!” I began to read the list of synonyms aloud when Jonathan interjected, “needy.” Tyler also interjected, “at the mercy of.” I redirected students’ attention to the synonyms from which they could choose. In this moment, I repeated the word *needy*. Kaitlyn made a connection to the word *needy* and interjected, “That’s my brother” (November 15, 2016).

A final episode focused on the recognition of target vocabulary in reading. I assigned four students to read aloud from Hester’s journal, the text for unit two. As Jonathan read the second paragraph, Elliott’s hand went into the air. He kept his hand raised the entire time as Jonathan read. I addressed Elliott and asked him to wait until after we finished reading to share his comment. Phillip finished reading the final paragraph and immediately Jonathan shouted out, “Can I say something?” Being fair to Elliott, I asked him to share first. Elliott stated, “Uh, I heard, um required, community, common and that’s, that’s all I heard.” Jonathan shouted out, “Wait! Hold on.” Kaitlyn also expressed that she was upset that Elliott stated most if not all of the target words presented in Hester’s journal (November 15, 2016).

I asked the students to reread Hester’s journal independently and underline target vocabulary. Kaitlyn asked for clarification, “Wait, if we see a word twice. Do we underline it twice?” Most students worked quickly and quietly. However, Kaitlyn and I shared interactions throughout the task. For example, she asked, “Would *encounter* be one?” I responded that it was a target word and directed her attention to the word wall. Kaitlyn referenced the word wall and responded, “Oh yeah, it is.” She then asked if *boundaries* was a target word. I responded that it was not a target word and redirected her attention to the word wall.

After locating the target vocabulary, I had the students add the words to our Excel spreadsheet. The spreadsheet recorded the number of times we saw or read target words in class. I asked students to define the target words (as they added them to the chart) in order to

informally evaluate students' word knowledge. The following responses represent students' definitions of the target word in parentheses (November 15, 2016):

- Norah: "Um, it's when we come together as one." (integrate)
- Elliott: "Uh, to have an unknown meeting." (encounter)
- Tyler: "To require; you're expected to do it." (require)
- Kaitlyn: "A community is a group of people." (community)
- Nevaeh: "It's like in the middle of the town." (common)
- Nevaeh: "Like it means like that it usually happens a lot." (common)

I want to further discuss the interactions I had with Kaitlyn and Nevaeh centered on the words *community* and *common*. I asked Kaitlyn, "What is a community?" She responded, "A community is a group of people." I questioned further, "That have similar beliefs?" Kaitlyn stated, "Similar, well like we're in a school community...not everyone in this school has the same beliefs." I responded, "Okay, so a shared goal?" She agreed, "A shared goal."

A second interaction occurred with Nevaeh. I asked her, "What does it mean if something is common?" She responded, "It's like in the middle of the town." This response provided a correct definition of *common*, but did not answer my question. Therefore, I stated, "Okay, so it can be a town common (pointing to picture on word wall) which is in the middle. What if it means like 'oh, that's just a common thing that happens?' What does that mean?" Nevaeh responded, "Like it means like that it usually happens a lot." These two interactions illustrate students' depth of knowledge surrounding target vocabulary. By this I mean, these interactions demonstrated that Kaitlyn and Nevaeh possessed high-quality representations of target vocabulary, which allowed them to flexibly determine word meanings in particular contexts.

5.0 DISCUSSION

In this section, I discuss findings related to the following: (a) my experience of enacting Word Generation resources, (b) Word Generation resources and activities and how they supported students' vocabulary learning and use of vocabulary, and (c) evidence of students' developing word consciousness. Finally, I discuss implications for future practice.

5.1 ENACTING WORD GENERATION

Using the WG resources was easy for me to do. The program has been intentionally designed with both educators and students in mind. By this I mean, the program provides teachers with step-by-step instructions for implementation as well as student-friendly directives and materials. Each WG unit focuses on six general academic words. These words reflect words that adolescent students will frequently encounter across academic domains and are crucial to comprehending academic texts. Most of my students (80%) did not know the words on the pretest. This suggests that the target vocabulary was appropriate for sixth-grade students who struggle with reading.

The WG activities were strategically designed to promote student engagement as well as provide multiple encounters with target vocabulary. I found the organization and interconnectedness of the activities to be a major strength of the WG resources. By this I mean, the activities purposefully built upon one another. For instance, the controversial issue presented

on Day 1 was carried over into subsequent activities (i.e., Hester’s journal; informational article; debate; argumentative essay). Hence, each unit was structured around a controversial issue and corresponding target words.

The WG activities also included questions that stimulated student discussion. For example, in unit one, students were asked, “If you were new to a school, what kind of support you would want?” Such questions required students to be active participants in daily lessons as well as engage in discussion. The discussion questions also included target words. Thus, the design not only promoted discussion, but also promoted the use of target words in students’ responses. A final strength of the WG activities is the intentional incorporation of target vocabulary in multiple contexts. Each activity included target vocabulary from current and past units. Thus, the activities were designed to provide students with multiple encounters of the target vocabulary in varying contexts.

All WG resources are free to educators and available through the SERP website (<http://wordgen.serpmedia.org/teacher.html>). These include: (a) instructional lesson plans, (b) student materials, (c) Action News videos, (d) vocabulary assessments, (e) assessment rubrics, (f) list of focus words, (g) word chants, and (h) vocabulary card sets. The resources I used most often included the Action News videos, assessment rubrics, word chants, vocabulary card sets, and of course the teacher and student lesson materials.

I found the Action News clips to be helpful in introducing target vocabulary as well as building students’ background knowledge related to the unit’s topic. A second resource that I used to introduce and review target words was the “word chants.” The students enthusiastically participated in the word chants by saying, clapping, shouting, and spelling each target word. I also found the vocabulary card sets to be valuable. The vocabulary cards included student-

friendly definitions and colored pictures for each target word. Thus, teachers can simply use these cards to introduce word meanings. The cards were also used to create a classroom word wall. Students often referred to this wall when engaging in the WG activities. A final resource that proved to be useful was the assessment rubrics for discussion, debate, and argumentative writing. These allow teachers to easily and objectively assess students' participation in discussions and debates as well as their ability to write argumentative essays. I made use of the writing rubric the most out of all three rubrics.

I found two limitations to the WG resources: (a) a lack of direct and explicit instruction centered on the functions and forms of target words and (b) inadequate supports for framing students' argumentative essays. The WG resources (i.e., word study chart) included components that mentioned various forms of the target words. However, the lessons fell short on providing students with direct and explicit instruction centered on how words can change from one form to another (i.e., verb to noun) as well as the orthographic changes that occur when transitioning between word forms. Thus, I created my own word study charts to help students examine the orthographic and syntactical features of target words.

A second limitation is the absence of adequate supports for framing students' argumentative essays. For example, the writing task in unit two focused on writing a persuasive letter. The WG directions explained the writing task using general guidelines (i.e., write your own opinion about the issue). Such directives may be sufficient for average performing students. However, my students require concrete directives and structure. Recognizing this, I created sentence starters or sentence frames to help structure the students' essays.

5.2 VOCABULARY LEARNING

The WG resources have been strategically designed to support students' development of high-quality representations of the target words as well as to encompass the features of robust vocabulary instruction. It is important to discuss the connections among students' learning, the WG resources, and the principles outlined in the Lexical Quality Hypothesis (LQH) and robust vocabulary.

The WG vocabulary card sets define target vocabulary using student-friendly definitions. This feature supports the argument that word meanings should be presented in a student-friendly manner in order to “explain the concept in language that is readily accessible so students can understand the concept with ease” (Beck et al., 2013, p. 46). Perfetti (2007) agrees that knowledge of written word forms and meanings are integral features in developing high-quality lexical entries or representations. Thus, the WG vocabulary card sets effectively define target vocabulary in a manner that is expansive and complete, but also accessible to students. In other words, the cards ensure that vague or incomplete explanations (i.e., dictionary definitions) are not used to define words. This is important since student-friendly definitions lay the foundation for developing deep and complete representations of a word's meaning.

Perfetti (2007) suggests that high-quality representations develop through instructional strategies that address the interconnectedness among five specific word features: phonology, orthography, morphology, semantics, and syntax. The WG word study charts reflect some of these features. The charts allow students to examine the interconnectedness among the features of words by investigating related word forms and cognates. Furthermore, the charts examine the target words contextually through situational questions and pictures. However, the WG charts do not directly or explicitly examine the orthographical or morphological features of words. Thus, I

created a supplemental word study chart to address these features. The use of both charts allowed the students to form deep understandings of word features and meanings.

Kucan (2012) claims that stable or high-quality representations are developed “by engaging students in carefully designed instructional sequences that focus directly on word meanings” (p. 363). The WG resources have been strategically designed to support students’ development of high-quality representations of the target words. For example, each component of the WG lessons or activities incorporate and focus on target vocabulary. Due to this strategic planning, students engage with the target words multiple times in multiple contexts. This design feature is grounded in research that suggests the development of accurate and deep processing of word meanings occurs through multiple encounters in various contexts (McKeown et al., 1985; Stahl, 1986; Beck & McKeown, 1991; Beck et al., 2013). This design feature also supports the argument that vocabulary instruction cannot be haphazard. Instead it must be systematically designed to develop high-quality lexical representations (Perfetti, 2007).

I suggest that the features described above influenced student learning as evidenced on their posttest and delayed posttest performance. I also suggest that this claim is supported by the assessments themselves which required students to correctly answer two items for each word in order to have the items counted as correct.

5.3 WORD CONSCIOUSNESS

Kucan (2012) states, “The idea of an energized verbal environment is to have words in play nearly all of the time; perhaps we can think of it as a classroom where words are constantly being noticed, investigated, celebrated, and savored” (p. 172). This quote reflects the type of

classroom that emerged through participation in the current study. By this I mean, students became generally alert to the target words and related word forms. It became a common occurrence for students to shout out the target words being heard or read. The students also demonstrated awareness of words by actively underlining or circling words in the WG resources as well as verbally expressing their excitement when seeing words in text. These observations support the argument that engagement in dynamic vocabulary instruction promotes a lively verbal environment in which students' word awareness becomes heightened. Additionally, heightened word awareness by students and strategic use by the teacher allows students to encounter the words multiple times in multiple contexts. This is important since research suggests that more encounters with words generate better results than fewer encounters (McKeown et al., 1985; Beck & McKeown 1991; 2007).

The current study also demonstrated that students were aware of target vocabulary outside of the classroom based on their Word Wizard contributions. Students identified multiple examples of target word usage which also supports the notion that the WG target vocabulary is representative of high-utility academic language.

Even though the students became highly conscious of target vocabulary inside and outside of the classroom; they continued to neglect target words in their writing. Students did use target vocabulary in their speech during structured discussions, but ignored target words in their written responses. I continued to stress the importance of using the target words in writing. However, my efforts seemed to fall short since most students demonstrated a lack of target vocabulary in written responses. This finding suggests that incorporating target vocabulary into written contexts may be more difficult than incorporating words into oral speech. Furthermore, this finding may suggest that a deeper knowledge of word meanings is necessary for

incorporation into written text. Lastly, the neglect of target words in writing may suggest that students who struggle with reading require more support in transitioning target vocabulary from oral speech into written texts.

5.4 IMPLICATIONS FOR PRACTICE

Participation in the current study has allowed me to deeply understand the purpose and role of practitioner research in education. I have come to recognize that effective classroom practices emerge when teachers “let go” and “unlearn” old practices in order to discover new or innovative approaches to learning (Menter, Elliot, Hulem, Lewin, & Lowden, 2011, p. 19). In short, the current study forced me to abandon my previous pedagogical practices and venture into the realm of systematic enquiry.

Prior to the study, I trusted that the curriculum prescribed by the district was appropriate and effective. I relied on the curriculum to guide my instructional approaches believing that if I taught the program with fidelity students’ learning would improve. I did not question or push-back on the curriculum. Instead, I was content with the status quo. My mindset changed as the students and I progressed through the intervention. I recognized that my students were flourishing and reaching higher expectations than those set forth in the prescribed curriculum. This recognition caused me to reflect on the power of action research and the mindset that accompanies it.

I came to recognize that a systematic approach to instruction aimed at answering guiding questions positively influenced my own practice as well as students’ learning. The guiding questions provided a framework from which I designed my instructional approaches.

Furthermore, the guiding questions forced me to continually assess and refine my practices in order to ensure the students and I were working towards finding answers or solutions to the questions. In short, my practice evolved to reflect the cyclical nature of action research.

The evolution of my instructional approaches will continue to influence my future practice. Moving forward, I plan to seek out questions or concerns and then examine them through critical systematic enquiry. This form of enquiry will require me to develop strategic plans prior to implementation. In other words, systematic enquiry will ensure that my approach to instruction is not haphazard. Furthermore, engagement in systematic enquiry will require me to closely monitor and reflect on the effectiveness of the implemented plan. One way I plan to monitor the effectiveness of future instruction is through the use of baseline data (i.e., pretest scores) and endpoint data (i.e., posttest). I also plan to use intermediate assessments and observations to monitor students' learning throughout the intervention. The data collected from intermediate assessments and observations will be used to refine or change my instructional approaches throughout the intervention. In other words, I will constantly evaluate and reevaluate the plan at various points of implementation and adjust accordingly in order to maintain effectiveness. Finally, engagement in systematic enquiry ensures that I am no longer tolerant of the status quo, but instead question, reflect on, and seek out effective ways to improve my practice and students' learning.

5.5 DISSEMINATION PLAN

In addition to the dissertation which will be available in the ETD repository, I plan to present my study and findings to the principal and reading specialists within my building. The presentation

will center on the following: (a) overview of instructional practices, (b) important findings, (c) impact on students' learning, and (d) overview of WG resources. It is important to inform others of the free resources available through the Word Generation website (SERP, 2009). It is hoped that by making other teachers aware of the WG program they will begin to utilize and implement the resources with their students. Furthermore, sharing my experience will serve as a testament to the potential benefits of incorporating the WG resources into one's instructional practices. Thus, it is also hoped that teachers' attitudes and perceptions on the importance of effective vocabulary instruction would improve. This is an effective way to take a leadership role and positively influence my surrounding environment. A report and staff presentation will contribute to the continued push for increasing vocabulary-focused pedagogy in schools.

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