

**AN INVESTIGATION OF A CROSS-CONTENT VOCABULARY INTERVENTION IN
AN URBAN MIDDLE SCHOOL**

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This case study was designed to investigate the implementation of a cross-content academic vocabulary intervention in an urban school. Two aspects of the intervention were the focus of interest: student learning and teacher sensemaking. Participants included four content-area teachers and their sixth-grade students. Each week, students received instruction on general academic vocabulary words in their social studies, science, and math classes through a variety of activities. Results of the posttest revealed that students scoring in the basic/below basic categories on a state reading test showed statistically significant positive differences in their learning as compared to a comparison school and maintained those differences on the delayed posttest. Additionally, this investigation examined how teachers made sense of the intervention and how their sensemaking shaped implementation, an area that has been underexplored in similar studies. Teachers' sensemaking was influenced by a number of factors related to knowledge and experiences, policy initiatives, and the social context in which teachers worked. A number of adaptations were made to the program as a result of how teachers made sense of the intervention in their context. This investigation reveals the complex nature of intervention implementation in schools. It also provides evidence for the importance of attending to vocabulary learning in middle school grades. Even without high fidelity of implementation of the

program, multiple exposures to words across varied contexts was shown to be effective with readers who did not demonstrate high levels of literacy achievement.

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PREFACE

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1.0 INTRODUCTION

In this era of teacher accountability and rigorous academic demands, factors influencing adolescent students' literacy achievement are at the forefront. According to the 2015 National Assessment of Educational Progress, only 36 percent of fourth grade students and 34 percent of eighth grade students performed at or above the level of proficiency in reading. Furthermore, a persistent gap continues to exist between White students and students of color. Only 16 percent of Black students in eighth grade scored at or above the level of proficiency compared to White students at 44 percent (NAEP, 2015). However, recent research has shown a number of instructional practices designed to address this problem (Duke, Pearson, Strachan & Billman, 2011; Lesaux, Kieffer, Faller, & Kelley, 2010; Snow, Lawrence & White, 2009). One instructional approach is a focus on academic vocabulary.

The present study is aligned with such an approach by investigating the implementation of a cross-content academic vocabulary intervention in an urban middle school. As part of this investigation, we examined how the intervention was implemented and how it influenced the learning of academic vocabulary by middle school students. The research related to the intervention was designed and conducted in collaboration with another researcher. My role focused on understanding the enactment of the intervention by the teachers.

We represent this investigation as an example of what Snow (2015) refers to as *practice-embedded educational research* (PEER). There are three principles that distinguish a PEER

approach. The first principle is partnership, which emphasizes that a study yields two kinds of knowledge – research and practice. “Both types are judged to be of equal value and importance to improving educational outcomes” (p. 461). The second principle is related to the purpose of an investigation. According to Snow, a PEER approach focuses on “pressing concerns of practitioners” and addressing those concerns is the standard of value rather than building on prior research in the same field (p. 461). The third principle is attention to an instructional innovation *and* to its implementation. For Snow, “The practice-inspired approach treats variation in implementation not as a mediating variable but as a crucial source of information” (p. 461). In the sections that follow, we describe how the present study addresses these features.

1.1 A PRESSING CONCERN

In designing this study, we deliberately chose to focus on middle school students because the vocabulary knowledge of these students is of critical importance. There is a marked increase in expository text across content areas that contains more complex vocabulary and disciplinary content in the middle school curriculum. Current state and national policy, including the Common Core State Standards (CCSS), has addressed this shift as well (Biancarosa & Snow, 2006; Carnegie Council on Advancing Adolescent Literacy, 2010; National Governors Association Center for Best Practices, 2010). One notable difference between previous academic state standards and the new CCSS is the focus on text complexity and academic vocabulary. The CCSS highlights the importance of teaching academic vocabulary, vocabulary included in academic texts across content areas.

Researchers have long established the importance of word learning to reading comprehension. (Beck, Perfetti, & McKeown, 1982; Coyne, Simmons, Kame'enui & Stoolmiller, 2004; National Reading Report, 2000; Perfetti & Stafura, 2014). For instruction to influence students' word knowledge and comprehension, instruction must extend well beyond students learning words and definitions (Beck et al., 1982; Mezynski, 1983; Nagy & Scott, 2000; Perfetti, 2007; Stahl & Fairbanks, 1986). Effective vocabulary instruction requires teachers to possess knowledge about the features of words and their related meanings, how to select words for instruction, and the various approaches for enhancing students' learning of vocabulary (Blachowicz & Fisher, 2000; Stahl & Nagy, 2006).

Specific to adolescent vocabulary learning, the Institute of Education Sciences (IES) developed their own recommendations for instruction based on a number of research studies (2008). They reported strong evidence to support providing explicit vocabulary instruction including the selection of a small number of high-utility words introduced in the context of engaging text, in-depth instruction and opportunities for students to interact with words across multiple contexts and through discussion and writing, and teaching strategies to build vocabulary, including attention to meaningful word parts through effective morphology instruction (Kamil, Borman, Dole, Kral, Salinger, & Torgesen, 2008). Vocabulary interventions that have incorporated these elements have produced promising results for students' vocabulary learning (Lesaux et al., 2010; Snow et al., 2009; Townsend & Collins, 2009).

Although general principles for effective vocabulary instruction have been identified and interventions that address these principles have been developed, instruction is a complex endeavor. That endeavor is influenced by the teachers who enact vocabulary instruction and the context in which the instruction is enacted.

In designing this study, we deliberately focused on the context of an urban middle school in which only 29 percent of the students scored at the proficient level in reading as measured by the Pennsylvania System of School Assessment (PSSA). Significant differences in reading comprehension and vocabulary knowledge among learners of varying ability levels, socioeconomic groups, and language backgrounds have been well documented in the literature (Cunningham & Stanovich, 1997; Hart & Risley, 1995; Kieffer, 2008). This is particularly the case in urban settings. Issues related to high teacher turnover rate, limited resources, higher levels of poverty, higher number of students reading below grade level, and limited opportunities for advanced literacy are more prevalent in urban school contexts (Ahram, Stenbridge, Fergus, & Noguero, 2011). Milner (2010) proposes that these “opportunity gaps” can be addressed through effective teaching and rich learning environments. Word Generation is an approach focused on creating such environments.

Word Generation (WG) is a vocabulary intervention targeting academic vocabulary instruction for middle school students in urban schools. The intervention was developed by the Strategic Education Research Partnership (SERP) in collaboration with Boston Public Schools. Students engage actively with the same academic vocabulary across language arts, math, science and social studies classes on a weekly basis. This format ensures that students gain multiple exposures to words in varied contexts. Although general academic vocabulary is the focus of instruction, a number of additional activities are implemented throughout the week including debate, critical thinking activities, and argumentative writing.

1.2 FOCUS ON INTERVENTION AND IMPLEMENTATION

Research on the effectiveness of the Word Generation program has shown positive results; however, the researchers acknowledged that they did not address fidelity of implementation (Lawrence, Capotosto, Branum-Martin, White & Snow, 2012; Snow et al., 2009). In the present investigation, I sought to understand how teachers implemented WG, but the focus was not on fidelity but rather on reality. Classroom observations and teacher interviews were essential data sources. I analyzed those sources using a sensemaking perspective, which emphasizes how individuals construct meaning in a specific context. The goal was to understand how teachers represented the WG intervention and how they decided to enact it. In addition, it was important to determine the factors that influenced their enactment of the program. This understanding would provide insights for both research and practice.

2.0 REVIEW OF THE LITERATURE

We designed this intervention to investigate middle school students' vocabulary learning and how teachers made sense of the intervention. The sections that follow describe the literature and the theoretical perspectives related to vocabulary instruction and teacher sensemaking related to the implementation of interventions.

2.1 VOCABULARY INSTRUCTION

I begin the review of literature related to vocabulary with a consideration of word selection. Specifically, I address the identification of words considered to be important for instruction. Given the staggering number of words that students are expected to learn, a fundamental question in teaching word meanings is which words to teach. Nagy and Hiebert (2011) call for a principled approach to determine which words should be included for vocabulary instruction. They outline several ways to consider word selection, including the word's role in the language, in the lexicon, in students' existing knowledge, and in a specific lesson.

According to Nagy and Hiebert (2011), in examining a word's role in the language there are two factors to consider. First is the word's frequency, or how often the word appears in text. Tied to frequency is the notion of dispersion, or how a word's frequency varies across different genres or subject areas. Morphological and semantic relationships with other words is another

factor to consider. For example, selecting words based on morphological relatedness provides students with exposure to more words in a shorter period of instructional time, but also with a knowledge of a variety of morphological relationships that they can recognize and apply to unfamiliar words when reading independently. The authors use the example of the word, *impress*. Readers can understand the relationship with the words, *impressed*, *impresses*, and *impressing*, but also have opportunities to understand the relationship between *impression*, *impressive*, and *impressible*. Benefits and guidelines for teaching words that are semantically related are not as clear. A distinction should be made between semantic similarity and semantic relatedness. Words that have similar meanings should not be introduced together since the close meanings between the words would be a source of confusion for students. A way to support students learning similar groups of words is to stagger the way the words are introduced. In addition, the goal of vocabulary learning is for students to develop an understanding of how words are related based on more general concepts. Moving beyond just the meaning of an individual word, but the semantic category as well. Another factor is how familiar a word is to students and the extent that it can be explained to students based on their existing knowledge and experiences. Last, is the word's role in a particular lesson or curriculum. This factor addresses the importance of a word's meaning for comprehending a given text.

For this investigation, the words in the WG intervention were selected based on frequency in the language and dispersion across disciplines. Researchers have advocated word selection based on the notion of utility; that is, words that are candidates for instruction should be words that students do not know or encounter through conversations, but words they will encounter frequently in advanced texts (Beck, McKeown, & Kucan, 2002; Hiebert & Lubliner, 2008). The decision to focus instruction on general academic vocabulary words falls under this

criteria. The designers of Word Generation contend that general academic vocabulary words are useful for students to know since these words can be found across disciplines. The Academic Word List (AWL; Coxhead, 2000) is a list of high-frequency words in texts found across various academic disciplines. These words are different from general high-frequency words found in narrative text or those found in a specific discipline. Words on the AWL appear in expository texts, but are not limited to one content area. As students enter middle school they are expected to read more disciplinary texts containing content-specific vocabulary in addition to general academic vocabulary. Although students are often taught vocabulary specific to a content area, it is less likely that they will receive instruction in general academic vocabulary (Corson, 1997). The AWL can serve as a helpful resource in selecting vocabulary for instruction, and a number of vocabulary programs targeted to enhance students' general academic vocabulary use the AWL as a resource for word selection (Lesaux et al., 2010; Snow et al., 2009; Townsend & Collins, 2009).

Although the notion that general academic vocabulary words “travel” across content areas make them ideal candidates for instruction, these words can pose a challenge, particularly to students who have not had prior access to academic vocabulary (Townsend, 2009). Corson (1997) contends that a lexical bar exists in the English language that privileges some learners over others. That is, some students' background and language experiences in the home have not engaged them in hearing and using the type of academic vocabulary expected for success in schools. For example, the words *function* and *suspend* are included in the AWL and are targeted for instruction in the WG program. Students may be familiar with the more general meaning of the word *function*, whereas it has a very specific meaning in a mathematics classroom. Many students may understand the meaning of *suspend* as it relates to one specific context such as

being suspended from school. However, they may not be able to explain the meaning of *suspend* as it relates to the science field.

Acquiring academic vocabulary is even more critical when coupled with content learning. Townsend, Filippini, Collins, and Biancarosa (2012) provide a useful example to illustrate this point. They describe a social studies teacher who announces to her class that they are going to discuss the benefits of capitalism. For students, there are two possible obstacles to comprehension: *benefits* and *capitalism*. An average or above average reader is most likely familiar with the word *benefit* and can focus attention on the new content-specific idea of *capitalism*. However, for a student with limited exposure to general academic vocabulary this scenario poses a significant challenge in that they are not only having to learn a complex concept, such as *capitalism*, but also the meaning of *benefit*. This example highlights the challenges of acquiring general academic vocabulary and the importance of providing effective instruction to middle school students.

Nagy and Hiebert (2011) also highlight the challenges of teaching general academic vocabulary words at the classroom level. Unlike content-specific words, general academic vocabulary words do not belong to one specific subject area. This might result in no one teaching the words since they are not exclusive to one content area. In agreement with Townsend and her colleagues (2012), Nagy and Hiebert (2011) also emphasize the challenge of students acquiring these words since they can have different meanings depending on the discipline.

2.2 LEXICAL QUALITY HYPOTHESIS

Given the importance of vocabulary knowledge for reading and the increasing demands of texts across content areas, it is important to consider how students develop their vocabulary knowledge and how instruction can mediate that development. Perfetti's (2007) lexical quality hypothesis (LQH) outlines specific word features that constitute a high-quality representation of a word. A high-quality lexical representation incorporates semantic, phonological, orthographic, syntactic, and morphological information about a word. For example, if a reader has acquired a high-quality representation of the word *admiration*, the reader understands the meaning of the word (semantics). The reader is also able to pronounce the word (phonology) and spell it correctly (orthography). In addition, the reader understands how individual parts of the word represent meaning and how different forms of the word and parts of speech are related (morphology and syntax). For example, the reader recognizes that the word *admiration* contains the suffix *-tion*, which means "the act of." In this case, *admiration* means "the act of admiring someone or something." The reader also understands that it functions as a noun and is related to the word *admire*, its verb form. Most importantly, it is the interconnectedness among the features of words which support readers in developing a high-quality representation of word meanings, not the features in isolation.

For readers, the strength of each word feature varies from word to word. The strength of the connections among these features also varies. For example, a reader might know one meaning and how to pronounce a word, but not know other meanings associated with the word. The strength or weakness of these features impacts reading comprehension (Perfetti, 2007). As a reader's experiences with words accumulate, they build more flexible and abstract representations of word meanings. Because these representations are flexible, when readers

encounter words outside of the original context, they can access word meanings rapidly, which directly influences their comprehension.

LQH has important implications for vocabulary instruction. Specifically, approaches to vocabulary instruction need to address multiple features of a word, including its pronunciation, spelling, meaning, morphology, and syntax (Kucan, 2012). Such instruction includes multiple encounters with words in a variety of contexts that allow students to construct rich lexical representations leading to rapid retrieval of word meanings.

In the following section I describe three vocabulary interventions targeting middle school students and how components of the interventions align with the LQH framework.

2.3 VOCABULARY INTERVENTION PROGRAMS FOCUSED ON GENERAL ACADEMIC WORDS

A small number of intervention programs have been designed to enhance the academic vocabulary of middle school students and have demonstrated positive results for student learning (Lesaux, Kieffer, Faller & Kelley, 2010; Snow, Lawrence, & White, 2009; Townsend & Collins, 2009). In the following paragraphs, I describe these interventions and the supporting research.

2.3.1 Language workshop

Language Workshop is a voluntary after-school instructional intervention designed to enhance the academic vocabulary of English language learners (ELLs) (Townsend & Collins, 2009). Townsend and Collins (2009) were interested in learning if instructional methods effective in

teaching vocabulary with elementary students would be effective with middle school ELLs acquiring general academic vocabulary. They were also interested in learning if the students' level of English proficiency would predict vocabulary growth.

Thirty-seven middle school students participated in Language Workshop that took place after school four days a week for five weeks. Students were ELLs from a variety of language backgrounds ranging from beginning to advanced English proficiency.

The Language Workshop intervention engaged students in a variety of activities that encouraged active engagement with word meanings. Activities included using target words in sentences, drawing illustrations to represent the words, and matching pictures with the words. The authors emphasized “game-like” activities by adapting popular games, such as Taboo, Jeopardy, and Pictionary to support student learning of target words. In addition, students participated in shared readings that contained target words.

The researchers measured students' growth in vocabulary knowledge during the intervention and compared their growth during a nonintervention period of comparable length. They compared students' growth on knowledge of target words and words that were not taught. The growth on knowledge of target words was both statistically and practically significant. In addressing the relationship between language proficiency and vocabulary growth, they found that students with higher levels of English proficiency demonstrated more growth during the intervention than those with lower levels.

Townsend and Collins (2009) argued that the results of their study made an important contribution to vocabulary research because it was the first to examine the effectiveness of research-based vocabulary instruction focused on academic vocabulary on the vocabulary learning of adolescent ELLs. Lesaux and her colleagues (2010) built upon this research on a

much larger scale by investigating the effectiveness of an academic vocabulary intervention that they developed.

2.3.2 Academic language instruction for all students

Academic Language Instruction for All Students (ALIAS) is an approach to teaching academic vocabulary targeted for use in mainstream, low-performing English language arts classrooms (Lesaux, Kieffer, Faller & Kelley, 2010). The 18-week program comprised nine 2-week units. In their first study of the program, Lesaux et al. (2010) investigated the effectiveness and ease of implementation of the ALIAS vocabulary program with sixth-grade students in an urban middle school. They examined the program's impact on ELLs and native English speakers' vocabulary and comprehension. They were also interested in learning about the degree and ease of implementation and how it was different from teachers' standard practice.

The participants included 476 sixth-grade students from ethnically diverse, low income backgrounds. Seventy percent of the students were ELLs or former ELLs. The study included a control group.

The ALIAS intervention engaged students in activities similar to those in the Language Workshop (Townsend & Collins, 2009). Activities included text-based discussions and writing prompts incorporating vocabulary words, crossword puzzles, and sketching vocabulary words. In addition to direct instruction of the words, students were also taught how to use context clues to determine word meanings as well as instruction in morphology. One day of each instructional cycle was dedicated to direct instruction of specific suffixes that were part of the target words. Instructional routines included teaching students how to break down words into morphemes, direct instruction of the most common roots and affixes, and morphology related activities.

Students who participated in the ALIAS intervention demonstrated significantly greater knowledge of target words, word meanings in context, and morphological skills as measured by researcher-developed measures.

In addition to student learning, the researchers examined the ease of implementation for teachers. Lesaux and her colleagues found that the resources played an important role in implementation. Teachers received support in the form of program materials and access to implementation specialists. Teachers viewed the materials as a major strength of the program, citing them as even more beneficial than the professional support specialist. In addition, teachers were assigned to a program specialist, an experienced teacher in the district, who met with them on a monthly basis to support implementation.

Subsequent studies of the program found that it had a significant effect on students' vocabulary knowledge, morphological awareness, written language, and comprehension of the expository texts taught as part of the program. Treatment effects of the intervention on ELLs were substantially larger than those for native English speakers (Kieffer & Lesaux, 2012; Lesaux, Kieffer, Kelley, & Harris, 2014).

2.3.3 Word generation

In the Language Workshop and ALIAS programs, instruction is the sole responsibility of one teacher. On the other hand, a unique feature of the Word Generation program (<http://wordgen.serpmedia.org/>) is its interdisciplinary approach to vocabulary instruction with teachers from all content areas assuming a role. Target words are introduced to students in their ELA classroom. Throughout the week students revisit those target words in their math, science, and social studies classes. Like the Language Workshop and ALIAS interventions, Word

Generation supports students in engaging with the words across multiple contexts through a variety of reading, writing, and listening activities.

The Word Generation program was first implemented in Boston Public Schools in partnership with the Strategic Education Research Partnership (SERP). After a year of pilot work, Snow, Lawrence, and White (2009) conducted a quasi-experimental study in which they compared students in five middle schools made up of 697 sixth through eighth grade students that implemented the Word Generation program to 319 students in three middle schools selected as comparison schools. Of the total number of students, there were 287 ELLs in the treatment schools and 151 ELLs in the comparison schools. The researchers were interested in determining if participation in Word Generation would predict improved vocabulary outcomes. Snow and her colleagues found that students in participating schools learned more of the target words than students in comparison schools. The ELLs in the treatment schools showed greater gains than the native English-speakers. This was not the case in the comparison schools. Furthermore, treatment students who improved their vocabulary scores on the pre- and post-tests also improved their vocabulary scores on the Massachusetts Comprehensive Assessment System (MCAS). Snow and her colleagues attributed this relationship to the higher-level literacy activities embedded in the Word Generation program which not only enhanced students' academic vocabulary knowledge but their broader literacy skills as well.

Subsequent studies of WG found that despite summer learning loss in both the treatment and control classrooms, students were able to maintain their improvements even a year after completing the program (Lawrence, Capotosto, Branum-Martin, White, & Snow, 2012) and that students without IEPs made greater gains across two years compared to students with IEPs (Lawrence, Givens-Rolland, Branum-Martin, & Snow, 2014).

Studies conducted on WG demonstrate that a cross-content vocabulary program designed to enhance the academic vocabulary of middle school students is effective in enhancing word knowledge. The researchers also note that WG's rigorous curriculum, which target higher level comprehension skills, critical thinking skills, debate, and argumentative writing, as a factor in enhancing students' broader literacy skills.

2.3.4 Similarities of the interventions

Despite differences in sample size, student population, and instructional delivery, Language Workshop, ALIAS, and Word Generation share some common features. These include: (a) focusing on a deep understanding of a small number of general academic words; (b) introducing the words in the context of engaging expository text; (c) providing direct instruction of word meanings; (d) providing multiple exposures to words across varied contexts; (e) engaging students in activities that require them to actively process word meanings.

Across all three interventions, researchers used the Academic Word List (Coxhead, 2000) as a source for selecting words for instruction. A small number of words of high utility were selected to ensure deep learning of the word meanings. Students were introduced to the words in the context of short pieces of engaging, expository text. Following the introduction of the target words and reading of the text, students interacted with word meanings across multiple days in varied contexts. Activities were modeled after those described as robust instruction by Beck, McKeown, and Kucan (2002) with follow-up activities in which students were involved in reading, writing, listening, and speaking activities. These activities encouraged active engagement with the words.

2.3.5 Interventions and LQH

The features of these interventions described above map onto the LQH. Specific activities including repeating target words after the teacher, reading words in the context of the passage, and using the words in writing address the phonological and orthographic features of words. Providing students with student-friendly explanations and exposing them to words in varied contexts addresses their semantic knowledge about word meanings. In addition, asking students to provide examples beyond the original context addresses their ability to use words in a variety of unique contexts. Opportunities for active engagement with words through reading, writing, and discussing word meanings deepens students' semantic knowledge.

Unique to ALIAS is its explicit attention to morphology. Direct instruction in roots and affixes and exposure to and practice with different forms of target words provide opportunities for students to develop their syntactic and morphological knowledge.

Recent studies of vocabulary intervention programs have demonstrated their effectiveness in enhancing students' word knowledge and comprehension. The features of these programs align with the framework provided by LQH in varying degrees. Instructional opportunities embedded in the interventions provide students with opportunities to establish high-quality representations of word meanings.

2.4 SENSEMAKING FRAMEWORK

The studies described above illustrate the positive impact of comprehensive approaches to vocabulary instruction focused on enhancing students' academic vocabulary. In the ALIAS

study, attention to fidelity and ease of implementation was a key aspect of the total investigation. The researchers who investigated Word Generation acknowledged that their studies did not address fidelity of implementation (Lawrence et al., 2012; Snow et al., 2009).

In order to understand an intervention, fidelity is only a very coarse indicator of how teachers are making sense of an intervention. To understand how teachers represent the intervention and evaluate its usefulness for their specific circumstances, the sensemaking framework provides a finer-grained approach.

Rooted in organizational literature, Weick (1995) describes sensemaking as a process through which requires individuals to construct meaning of a task. According to Weick, a fundamental element of sensemaking is that it is both an individual and social activity and that it is difficult to separate these two components. Sensemaking theory has been applied to various fields of research. Recently, educational scholars have applied the sensemaking framework to examine policy and reforms in education (Coburn, 2001, 2005).

Coburn (2001) focused on two important aspects of sensemaking. First, is the notion that sensemaking is collective in which she describes as “rooted in social interaction and negotiation” (Coburn, 2001, p. 147). Sensemaking is also “deeply situated in teachers’ embedded contexts” (Coburn, 2001, p. 147). In her 2001 investigation, Coburn was interested in learning how teachers made sense of policy related to reading instruction in the context of their professional communities and the relationship between collective sensemaking and changes in teachers’ classroom instructional practices. She followed teachers in one elementary school for a year as they worked to improve their reading instruction. She examined the ways they interpreted policy messages and how they altered those messages through their interactions in their professional communities. Through teachers’ collective sensemaking, she found that teachers adapted and

transformed messages about reading policy and instruction. Furthermore, this process was influenced by teachers' worldviews and current teaching practices, as well as structural conditions of their workplace and building leadership.

In a subsequent study, Coburn (2005) conducted a cross-case study of how principals shaped teachers' sensemaking. She was interested in understanding the relationship between principals' sensemaking, their leadership practices, and teachers' understanding and implementation of policy. Similar to the teachers studied in her previous work, principals were drawn to ideas that supported their existing knowledge and teaching philosophy. These messages were influenced by social interactions with teachers and their own knowledge and beliefs on how teachers learn.

In addition to policy research, more recent studies have applied the sensemaking framework to specific school and district initiatives including how teachers responded to a professional development initiative (Allen & Penuel, 2015), how various stakeholders in an organization made sense of a district-wide literacy initiative (Patterson, Eubank, Rathbun & Noble, 2010), and how principals implemented a teacher evaluation program (Carraway & Young, 2015).

Allen and Penuel (2015) applied the sensemaking framework in a study which examined how teachers responded to professional development focused on the *Next Generation Science Standards*. Specifically, they were interested in learning the sources of ambiguity that teachers experienced during and following professional development and how engaging in sensemaking influenced their instructional decisions. Sensemaking theory provided a helpful lens for this investigation since resolving issues of uncertainty is an important feature of sensemaking theory

(Weick, 1995). The participants were middle school teachers in two schools in the same district who participated in the professional development program.

Researchers found that teachers at both schools encountered degrees of uncertainty around instructional goals, available accountability measures, and resources, in addition to time to adapt materials and assessments to correspond with the new standards, and conflicting views of the reform. A key finding was that teachers engaged in sensemaking in different ways. In the school where teachers had opportunities to collaborate and discuss conflicting messages, they were better able to resolve perceptions of incoherence between the messages of the standards as outlined in the PD and their school contexts. Like the teachers in Coburn's study (2001), these teachers also looked to their colleagues in making sense of new and, at times, ambiguous messages. The findings suggest the importance of allocating time for teachers to participate in sensemaking around issues of likely incoherence.

Patterson, Eubank, Rathbun, and Noble (2010) also applied the sensemaking framework to understand how teachers' perceptions of a literacy initiative, as well as the perceptions of principals, central office administrators, and students influenced implementation. Their study involved 38 administrators, teachers, and students across two secondary schools in a large urban school district. These researchers were interested in learning how different stakeholders perceived and made sense of an adolescent literacy course targeted for struggling readers. They found that each stakeholder made sense of the course in different ways regarding the rationale for adopting the program, how to implement the course, and its effectiveness in supporting students' literacy skills.

District administrators, including superintendents and literacy coordinators, served as the primary decision makers for program adoption and implementation. They strongly believed in

the efficacy of the course and felt that the professional support provided by literacy coordinators was sufficient for teachers to implement the program with fidelity. The literacy coordinators expressed similar views and shared the multiple ways that they supported teachers, including co-teaching, modeling lessons, and working with students in small groups. Like district administrators, building principals believed that the course would benefit their students, but they were not included in the decisions to adopt the program or how to proceed with implementation. Therefore, they had limited capacity to support teachers' instruction or make decisions about students' placement in the program.

Teachers also believed that the program had some positive attributes, but these were outweighed by their frustration with the program and various obstacles to implementation. First, teachers' philosophical beliefs about effective literacy instruction differed from those promoted by the course designers. As ELA teachers, they felt that they did not have the necessary training to provide an intervention targeted for struggling readers. Like the building principal, teachers expressed concern about the school's lack of involvement in student placement decisions. Teachers did not feel that the professional support they received was adequate to implement various components of the course. In addition, they were uncertain about the district's commitment to the course since the course was not included in the school's overall improvement plan. They also reported that many programs come and then disappear in the district.

Students stated that they valued the course, but in ways that were not congruent with the goals of the program. While some students expressed how specific strategies helped with their literacy skills, other students reported that the time set aside for the initiative was an opportunity to complete work for other subject area classes. They reported that they were unsure of the expectations of the program.

This study demonstrates the importance of attending to the perceptions of all stakeholders in an organization and how differently they made sense of an innovation depending on a number of factors. Factors related to knowledge, shared vision, coordination, beliefs and perspectives influenced how stakeholders made sense of the intervention in very different ways consequently affecting how the intervention was implemented by teachers.

Carraway and Young (2015) made use of Weick's sensemaking framework in their investigation of how three building principals implemented the Skillful Observation and Coaching Laboratory (SOCL) program. These researchers examined how principals in one rural school district implemented different aspects of the program and the factors that supported and challenged implementation. They were most interested in principals' perceptions of the program. Carraway and Young (2015) argue that the sensemaking framework is applicable in that Weick (1995) highlights the importance of attending to the perceptions of participants in an organization as in the Patterson et al. study (2010).

Similar to what researchers discovered in previous studies, a number of factors related to principals' sensemaking were found in Carraway and Young's study as well. Factors included principals' content knowledge, the meaningfulness of the program and how it related to their identity as an instructional leader, preexisting knowledge, structural conditions in their school, and positive feelings. Principals referred to knowledge they acquired from a previous training program and how elements of SOCL related to their preexisting knowledge and experiences conducting classroom observations. Contextual factors that involved managing the school such as parent meetings, bus issues, and discipline also played a role as well as other district initiatives taking place in their buildings.

The results of these studies suggest that educators' preexisting knowledge, beliefs and experiences highly influence how they make sense of new initiatives and how they implement and adapt these initiatives in their schools and classrooms. Sensemaking is not an isolated process. It is influenced by interactions with colleagues, as well as with students, and various levels of administrative staff. In addition, sensemaking is influenced by factors inside and outside of the organizational structure of schools. Figure 1 represents the multiple and interrelated factors that influence teachers' sensemaking.

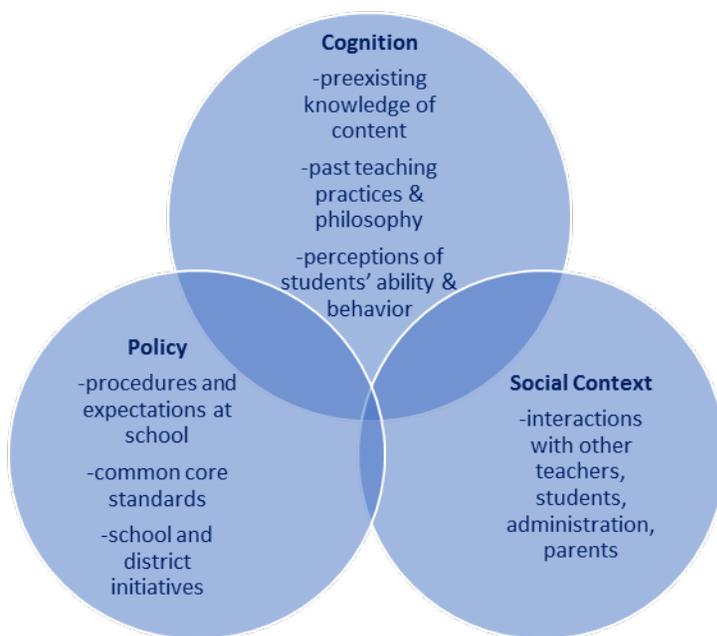


Figure 1. Factors influencing teachers' sensemaking

Sensemaking is a framework that seeks to understand the process of how teachers construct meaning and how that meaning translates into action. To understand the implementation of Word Generation at Dunbar Academy I made use of sensemaking theory. A sensemaking perspective allowed me to investigate the actions of teachers of diverse backgrounds and experiences who taught different content areas. The social context in which teachers worked, including their interactions with colleagues, administration, and students was

also investigated for their potential role in influencing how teachers made sense of Word Generation.

Lastly, Dunbar was a potentially rich context in which to study teacher sensemaking related to the implementation of a new initiative. Similar to the challenges that other urban schools face, Dunbar had a high teacher turnover rate resulting in new teachers teaching unfamiliar content while attending to multiple school initiatives that were taking place. In addition, there were a high number of struggling readers who were not receiving additional reading support. Dunbar was also in a period of transition. After years of following a prescribed district curriculum, teachers had more autonomy on how they taught their specific content to students.

This type of investigation is in line with features of PEER. By examining the implementation through a partnership with classroom teachers, it honors the realities of practice and seeks to understand how teachers are making decisions in their daily work with students. Snow (2015) contends that there are two different, but equally important types of knowledge – research and practice. This investigation explores both these types of knowledge. In addition, it addresses a pressing concern, the vocabulary knowledge of middle school students. This investigation not only focuses on the intervention, but the ways in which teachers constructed meaning and factors that influenced their sensemaking. This approach to research offers valuable insights into the challenges of implementation and the ways in which teachers' sensemaking influences how interventions are implemented in the context of an urban school.

3.0 METHODOLOGY

The purpose of this study was to describe the implementation of a cross-content area vocabulary intervention in an urban middle school. The study provides a detailed snapshot of how teachers made sense of the intervention, the multiple factors that influenced their sensemaking and how it shaped the implementation. In addition, this study provides a description of the intervention resources and instructional approaches, how those resources and approaches were enacted, and the effects of enactment on student vocabulary learning. Data sources include field notes from classroom observations, teaching logs, school- and district-level documents, classroom materials, transcripts of interviews with teachers, and student pretest/posttest data. The following research questions guided this investigation:

1. What was the effect of a cross-content academic vocabulary intervention on student learning of general academic vocabulary words?
2. How did teachers make sense of the intervention and how did their sensemaking shape implementation of the program?

3.1 RATIONALE FOR CASE STUDY RESEARCH

This investigation was conducted as a case study. It is well-suited for case study research for a number of reasons. Case study is a preferred method when the researcher is interested in

addressing “how and why questions” (Yin, 2014, p. 10). The focus of this investigation is to understand the implementation of a specific cross-content vocabulary intervention in an urban middle school. This focus extends beyond a superficial understanding requiring a more in-depth examination. The collection of multiple data supported this investigation.

In addition, this investigation aligns itself with the purpose of case study in that it provides a rich and detailed description of a phenomenon in its naturally occurring context (Merriam, 2009). In order to gain a deep understanding of how elements of the vocabulary intervention were adopted by teachers and influenced student learning, the intervention cannot be accurately studied or represented if isolated from the naturally occurring context of the middle school classrooms in which it was enacted. The experiences and perspectives of the teachers played a critical role in understanding how this intervention influenced instruction and learning. By situating the study in classrooms, I was able to consider multiple factors that may have influenced how teachers made sense of the intervention including how students responded to shape implementation. To accurately capture classroom dynamics, a rich description is necessary.

In closing, case study affords researchers the opportunity to gather a “rich and stronger array of evidence” (Yin, 2014, p. 66). Not only did the collection, analysis, and triangulation of multiple data sources support a rich description of the case, it also strengthened the credibility of the findings.

3.2 CONTEXT AND PARTICIPANTS

Dunbar Academy is a 6-12 public school in a large northeastern city that has a collaborative partnership with the university in which we are faculty. The school houses approximately 530 students in grades six to twelve. The racial distribution is 93 percent African-American and 6 percent white/other. Eighty-seven percent of students receive free or reduced lunch. Academic achievement is below the state average in reading. Only 29 percent of students scored at the proficient level as measured by the Pennsylvania System of School Assessment (PSSA).

Dunbar Academy was established in 2008 through a university partnership. The school opened for the 2008/2009 school year with 145 ninth-grade students. During each consecutive year, additional grade levels were added. Through the university partnership, the expectation is that all students will pursue post-secondary education after graduation. The school places importance on a small school learning environment which provides opportunities for students to receive additional support services to access post-secondary education.

3.3 OUR WORK WITH DUNBAR ACADEMY

We were invited to work with Dunbar teachers to support student vocabulary development for the 2013-2014 school year. Vocabulary development was a stated goal for that school year. During that time, we worked with the middle school teachers representing various content areas to implement what we called the Enhanced Word Generation program. Although, the original WG materials (2009) emphasize the importance of selecting general academic vocabulary that are of high utility in texts students will encounter across subject areas, provide students with

multiple examples, and encourage interaction with words in meaningful ways through discussion and writing, there were components missing that we believed would further enhance instruction. We enhanced the WG resources with student word charts which provided student-friendly explanations, sample sentences and/or examples, and forms of the words. In addition, we included activities for teaching and reviewing the words each day and a series of review activities after the completion of every three WG units.

We worked most closely with the English language arts teacher, who took the lead role in implementing WG. She helped to organize the implementation calendar, distribute materials to teachers, and offered feedback on how to improve implementation. All the middle school teachers used the resources to some extent, but they voiced concerns about the amount of time the lessons took and the interest-level of the topics. We agreed to address these issues, and the teachers agreed to participate in the WG program the next year with more consistent implementation and classroom observations.

During the summer, we reviewed the 2009 WG resources and agreed with teachers that the topics were not as compelling or current as they could be. In a review of the WG website, we discovered the 2012 resources. While the 2009 resources were presented in standard worksheet formats, the 2012 resources were well designed with 4-color graphics including photos and maps and with interactive cues for students to turn and talk and participate in a variety of activities such as reader's theater and fishbowl. We were eager to share these resources with the middle school teachers.

3.4 CURRENT INVESTIGATION

The current investigation took place during the 2014-2015 school year. When we contacted the school to set up a meeting with teachers to share the new WG resources, we discovered that only the math teachers from the previous year remained. There were new language arts, social studies, and science teachers. The 11th grade English and social studies teachers who had team-taught the previous year were assigned to teach grades 6, 7, and 8 language arts/social studies. Two new teachers were hired to teach science. All the middle school teachers agreed to implement the WG lessons except the English language arts teacher who said that she had to use all class sessions to focus on required standards.

According to the school's *Academic Vision*, teacher collaboration and student achievement appeared to be key priorities in the school. Middle school teachers shared a common planning time every day. In addition, time was built into their schedules for professional development and collaborative planning. Priorities for increasing student achievement were developed collaboratively by a building leadership team comprised of building principals and teachers representing various grade levels and subject areas. As noted previously, the stated academic goals for the school focused on vocabulary instruction across content areas in the 2013-2014 school year. In 2014-2015, the instructional focus shifted to lesson planning.

3.4.1 Participants

Four classroom teachers representing various content areas and years of teaching experience participated in this investigation. Ms. Snyder, a social studies teacher, took a lead role in

implementing the program due to the social studies focus of the WG materials. Prior to the 2014-2015 school year, she taught eleventh grade social studies at Dunbar for four years. This was her first year teaching middle school students. Ms. Johnson was a first-year science teacher and recent graduate of a master's level teacher education program from a local university. The math teachers, Mr. Marvin and Mr. Henderson shared teaching responsibilities due to the low enrollment of sixth grade students. Both were experienced teachers in the school and district who participated in the WG initiative the previous school year. All teachers were White.

The participants for this investigation were sixth-grade students from one classroom. Since there was only one sixth-grade classroom in the building, students were in classes together throughout the day. The initial enrollment number of participants was 19 at the beginning of the school year. Due to student absenteeism and school transfers, the number decreased to 14. The class included eight boys and six girls.

3.4.2 Materials

As previously discussed, a number of Word Generation materials have been created for use across grade levels and content areas. In the work described here, the WG materials selected were those that focused on social studies content. The main focus of the sixth-grade units is ancient civilizations. Topics are aligned with the district curriculum and academic standards. Each unit focuses on an essential question and 5-6 vocabulary words. For example, a unit on ancient Egypt focuses on the question, "The Egyptian Pharaohs: Wise investors or wasteful spenders?" Vocabulary for the unit includes: *justify*, *monumental*, *surplus*, *architecture*, *infrastructure*, and *hierarchy*. Throughout the unit students read articles about the pyramids and temples of ancient Egypt and participate in activities centered around discussion and debate. The

culminating activity requires students to write a persuasive argument related to the essential question. The math lesson asks students to measure the square units of the area of the different sides of a pyramid. The science lesson includes a reading about how modern monuments sustain damage caused by earthquakes. Students design towers of various sizes and simulate the effects of an earthquake. The language arts lesson focuses on an article that represents more current information related to the content and includes questions for discussion. The targeted vocabulary words are embedded in all activities across subject areas.

3.4.3 Implementation plan

The intervention took place during the first semester of the 2014-2015 school year. Table 1 provides a timeline of the intervention and related activities. Similar to the ELA teacher the previous year, Ms. Sndyer, the social studies teacher, took the lead role with implementation. Since the new WG resources were focused on social studies content, Ms. Snyder taught daily WG lessons. Most importantly, she was responsible for introducing the words to students on the first day of instruction. According to the WG lesson plans, words are introduced with a chart that provides definitions and sample sentences as well as forms of selected words (e.g., *justify/justification*). This chart is supposed to be used on the first day of instruction. We prepared electronic copies of the chart for teachers to display and use in reviewing the words and their meanings. We also provided the unit words on index cards for students to select and discuss. Following the introduction on the first day, activities were implemented by the math and science teachers. Mr. Marvin and Mr. Henderson implemented the WG lesson every Wednesday during math class, and Ms. Johnson implemented the WG science lesson every Thursday. These

lessons were in addition to the daily social studies lesson. Therefore, students were taught two WG lessons: one on Wednesday and one on Thursday.

Table 1. Timeline of the intervention

Dates	Activities	Description
September 8	Pretest	Pretest of selected WG targeted vocabulary words administered by the social studies teacher
September 22-26	Unit 1: The Pharaohs of Ancient Egypt: Oppressors or Great Leaders?	Monday-Friday-SS lesson Wednesday-Math lesson Thursday-Science lesson
September 29-October 3	Unit 2: The Egyptian Pharaohs: Wise Investors or Wasteful Spenders?	Monday-Friday-SS lesson Wednesday-Math lesson Thursday-Science lesson
October 6-10	Unit 3: Was it Better to be An Athenian or Spartan?	Monday-Friday-SS lesson Wednesday-Math lesson Thursday-Science lesson
October 13-17	Unit 3: continued	Social studies only
October 20-24	Review Weeks: Units 1-3	Social studies only (Review activities for words in Units 1-3)
October 27-31	Unit 4: The Legacy of Alexander the Great: Great Leader or Power Hungry Tyrant?	Monday-Friday-SS lesson Wednesday-Math lesson Thursday-Science lesson
November 4-7	Unit 5: Ancient Roman Government: Whose Voice Counts?	Monday-Friday-SS lesson Wednesday-Math lesson Thursday-Science lesson
November 10-14	Unit 5 continued	Social studies only
November 17-21	Unit 6: Pompeii: An Irresponsible Decision or Unexpected Disaster?	Monday-Friday-SS lesson Wednesday-Math lesson Thursday-Science lesson
November 24-26	Review Week: Units 4-6	Social studies only (Review activities for words in Units 4-6)
December 11	Posttest	Posttest of selected vocabulary words administered by SS teacher

In addition to the WG resources, we designed lessons to review the words after every three units of instruction. As in our work with Dunbar teachers the previous school year, we included a menu of instructional activities for students to review the words. The activities included engaging interactions with words through the completion of skits, word webs, and activities related to word forms. The review activities were intended to be implemented by Ms. Snyder during students' social studies period.

3.4.4 Data sources

Multiple sources of data were collected and were analyzed to provide a rich representation of how teachers made sense of the vocabulary intervention and how it was implemented. To understand teacher sensemaking, I relied mainly on field notes from classroom observations and semi-structured interviews with teachers. Additional data sources included classroom materials such as student work and class assignments, school- and district-level documents, and pre- and posttest scores. These data sources provided a rich description of how teachers' sensemaking shaped implementation of the intervention. The triangulation of multiple data sources strengthened the credibility of the findings (Yin, 2014).

3.4.4.1 Observations

Participant observation was employed in this study. Researchers using participant observation believe that in order to gain a meaningful and authentic understanding of those we study we must immerse ourselves in the context of their daily lives (Emerson, Fretz, & Shaw, 1995). To understand the implementation of the vocabulary program and the factors that might influence its

implementation and effectiveness, it was important to learn how teachers enacted the program and how students responded to their instruction.

At the beginning of the study, we provided teachers with an implementation schedule indicating the day of the week designated for their specific subject area. As previously stated, Ms. Snyder implemented daily lessons and the math and science teachers provided instruction on designated days of the week. In order to ensure that we observed teachers using the WG materials, observations were conducted on those designated days. I coordinated my observations with Ms. Snyder to ensure that I would be able to observe different elements of the program, including how words were introduced and explained to students and how students responded to a range of activities.

Classroom observations were conducted by members of the research team. For social studies, I conducted a total of 10 formal observations from September to December. Each observation was approximately 45 minutes in length. One member of the team conducted observations during the math lessons and the other observed during science instruction for a total of 10 observations across the math and science classes. The purpose for the observations were twofold: (a) to determine if and how teachers implemented the WG resources and (b) to determine how students responded to the intervention based on their participation and level of engagement. Prior to conducting the observations, the research team met to discuss a general observation protocol followed up with an email outlining specific features of the lesson to include in the fieldnotes. See Appendix A for the observation protocol.

Initially during my observations of classroom instruction, my role was that of an *observer as participant* (Merriam, 2009). During the initial observations, I did not participate in classroom activities, offer feedback on instruction, or interact with students. The reason for this level of

involvement was twofold. First, it afforded me the opportunity to record detailed notes of the setting, participants, and activity. If I engaged in classroom activities, it would have distracted me from collecting data and limit what I could observe. Second, if I interacted with the teacher and students, it could have influenced the instruction and learning taking place.

I recorded open jottings (Emerson et al.,1995) in a notebook. As Ms. Snyder began to address students by name, I used pseudonyms to protect their identities. Immediately following my observations, I added necessary details to the jottings to capture observations that might not have been included in my jottings. I also included my own impressions and questions I wanted to pursue during the next observation. Once these details were complete, I read over the pages of my jottings to determine significant interactions and events that I planned to transfer to fieldnotes. Qualitative researchers emphasize the importance of allowing a block of concentrated time immediately following observations to interpret jottings (Emerson et al., 1995; Hatch, 2002; Merriam, 2009). In scheduling observations, I took that into consideration. I planned an uninterrupted block of time after each observation to transfer my jottings to field notes. The research team members who conducted the math and science observations followed a similar process.

3.4.4.2 Teaching logs

Following each WG lesson, teachers were asked to complete a teaching log entry. The purpose of the teaching log was to learn teachers' general impression of the lesson, the amount of time it took to complete the lesson, the level of reading difficulty for their students, what went well, what did not go well, and the level of student engagement. This data source provided an important source of information about how teachers perceived the lesson and how students responded to the lesson in terms of engagement and level of reading difficulty. These factors

influenced how the lessons were implemented and received by both teachers and students. See Appendix B for the teaching log entry form.

3.4.4.3 District/school documents and classroom materials

Agendas of professional meetings, school newsletters, curriculum materials, and classroom materials including student work samples and teacher-created materials provided additional information about the school context. Review of these documents provided additional insight into what I observed during classroom instruction and learned from teachers in interviews (Stake, 1995). Most importantly, documents serve as an “objective” and “nonreactive” source of data (Merriam, 2009).

3.4.4.4 Interviews

At the conclusion of the study, I conducted semi-structured interviews with each teacher and asked them to discuss their experiences implementing the intervention. Interviewing is a common method in case study research, particularly when it involves a small number of selected participants (Merriam, 2009). The purpose of this investigation was to understand how teachers implemented the intervention and the effects of the enactment on students’ vocabulary learning. More specifically, I wanted to understand how the materials were utilized during instruction. In addition, I was interested in learning teachers’ perceptions of the intervention including the affordances and limitations of implementing a cross-content vocabulary initiative in an urban middle school setting. To capture a holistic representation of this phenomenon, the experiences and views of the teachers are necessary (Merriam, 2009).

The interview focused on three main themes: teachers’ process of implementation, contextual factors that might influence implementation, and how teachers viewed student

learning and engagement. I intended the interview data to function as a rich complement to the observational data. Hatch (2002) writes, “These meaning structures are often hidden from direct observation and taken for granted by participants, and qualitative interviewing techniques offer tools for bringing those meanings to the surface” (p. 91). Although, I observed adaptations to the WG lessons during classroom observations, I could only speculate about why those adaptations were made. The interviews provided me with the opportunity to gain insight into the teachers’ sensemaking that informed those decisions.

Although I designed specific questions for consistency across interviews, I also included additional probes and questions to better understand each teacher’s perspectives and experiences. Information gleaned from the observational data, teaching logs, school documents, and classroom materials supported the formulation of questions related to the specific content area and teacher. For example, based on information gleaned from a school-wide newsletter sent to the teachers at the beginning of the school year, I discovered that a number of programs and initiatives were occurring simultaneously. I was interested in learning how these initiatives aligned with the vocabulary intervention and how teachers allocated their time among the initiatives. Therefore, I developed interview questions that addressed this issue. In addition, I used observational data to formulate additional questions specific to each teacher. For example, during a classroom observation I noted that Ms. Snyder had designed supplemental activities focused on the target words. I was interested in learning more about her decision to create the activities. During the interview, I presented a copy of one of the activities and asked her about her decision to create it.

All interviews were approximately 20 minutes long and audio-recorded. The interviews were transcribed to ensure accuracy and provide opportunities to revisit as necessary. See Appendix C for the general interview protocol.

3.4.4.5 Assessment data

For this investigation, we developed assessments to measure student knowledge of targeted vocabulary words. Assessments were administered by the classroom teacher. Each assessment consisted of 20 items. When designing the assessments, we selected focus words from each WG unit. Words that were more content-specific, such as *republic* and *democracy* were not included in the assessments. The pretest was administered two weeks prior to the beginning of the WG lessons. The posttest consisted of the same items as the pretest in a different order of presentation. Students were given the posttest approximately two weeks following the last WG lesson. Included below is a question representative of those provided on the pre- and posttests.

If a source of information is **authoritative**, it

- a. is understandable.
- b. is trustworthy.
- c. must be verified.
- d. is current.

We also designed a delayed posttest, given five months after the intervention. For all three assessments, we deliberately crafted items that required students to do more than simply retrieve a definition. Specifically, we intentionally designed the delayed posttest to provide a different format and context for demonstrating students' understanding of word meanings. For example:

If a book is authoritative, what might you think?

- a. I'm not sure if I believe everything the author says.
- b. I wish the author had given more references.

- c. I can trust what this author wrote.
- d. I will have to check on some facts in this book.

See Appendices D, E, and F for the assessments. All three assessments were scored by members of the research team. We also secured the cooperation of the sixth-grade social studies teacher at Rosa Parks Charter, a school in the same city, whose students served as a comparison group. Students at Rosa Parks received a vocabulary enrichment program which was a daily part of students’ literacy learning during their English language arts class. However, the words targeted for this program were not those in the WG program. Both groups were, however, social studies classes. Table 2 provides student demographic information for both schools.

Table 2. Sixth-grade students at Dunbar Academy and Rosa Parks Charter School

	Dunbar Academy	Rosa Parks Charter School
Percentage of students receiving free/reduced lunch	87%	83%
Percentage of Students of Color	93%.	90%
Scores on state reading assessment	71% basic or below basic	57% basic or below basic

Yin (2014) outlines four principles of data collection including using multiple sources of data and creating a case study database. This study made use of multiple sources of evidence

providing the opportunity for triangulation. Although the use of multiple data sources is important, it does pose a challenge in terms of organization and analysis (Merriam, 2009). As Yin suggests, I created a case study database to support this process. This inventory of data sources including interviews, field notes, documents, and assessment data was organized into separate folders by data type. Hard copies of documents, field notes, student assessments and activities were organized by data source as well.

3.4.5 Data analysis

The data collected in this study was analyzed using both qualitative and quantitative methods in order to address the following research questions:

1. What was the effect of a cross-content academic vocabulary intervention on student learning of general academic vocabulary words?
2. How did teachers make sense of the intervention and how did their sensemaking shape implementation of the program?

Researchers agree that data collection and analysis in qualitative research is not a defined linear process and there is not a clear distinction as to when data collection is complete and analysis begins (Merriam, 2009; Stake, 1995; Yin, 2014). As previously stated, the collection of data was determined by ongoing analysis of existing data sources. Throughout the data collection process, I reviewed field notes and classroom materials. I asked questions about what I observed during classroom instruction and read in school documents. This continuous attention to the data provided me with the opportunity to further investigate preliminary themes that emerged. These themes informed the design of the interview questions. Stake (1995) writes, “Analysis is a matter of giving meaning to first impression as well as final compilations” (p. 71).

The main focus of the qualitative analysis consisted of the teacher interviews and field notes. Data analysis involved using a recursive and iterative process of reading and revisiting the interview data and fieldnotes (Strauss & Corbin, 1990). This allowed for each stage of data collection and analysis to inform subsequent stages and for opportunities to revisit data sources.

3.4.5.1 Interviews

Before I analyzed the fieldnotes, I focused on the teacher interviews. During the first pass, each interview was read in its entirety as I noted emerging themes in the margins of the transcripts. Since the interview questions were designed based on preliminary themes that emerged from the classroom observations, I used the individual interview questions as a basis for coding responses. Codes were developed to capture significant findings related to teachers' sensemaking of the intervention, including factors that shaped sensemaking such as preexisting knowledge, beliefs, and how teachers perceived the intervention's effectiveness on student engagement and vocabulary learning (Merriam, 2009). I also looked for themes that teachers mentioned on their own. These themes became part of the analysis. This process was repeated with each interview transcript. As each transcript was read, I noted emerging themes within and across interviews.

3.4.5.2 Observations

I used the information gleaned from the interviews to guide what I attended to in the classroom observation field notes. Similar to the interview data, I read each field note in its entirety noting themes that emerged from the interview data in addition to new themes that emerged. I developed a matrix listing the themes in the interviews and fieldnotes and evidence from each data source to support that theme, including representative quotes from each teacher. This format enabled me to see patterns or themes within and across cases (Miles, Huberman, & Saldana,

2014). To explore whether the themes teachers discussed in the interviews were reflected in their instruction, I analyzed the instruction teachers provided during the classroom observations. In addition to exploring common themes across data sources, the interviews were used as supporting evidence for how teachers enacted the program during their observed lessons.

3.4.5.3 Teaching logs

Teaching logs were completed by each teacher after a WG lesson. Teachers included the amount of time the lesson took to implement, what worked well and did not work well, the difficulty of the lesson including the reading level and the level of student engagement. Information from the teaching logs helped address how the intervention was implemented and teachers' perceptions of how students responded to the program. In addition, the information from the teaching logs was analyzed to confirm or contradict data from other sources including observations and interviews.

3.4.5.4 District/school documents and classroom materials

School documents included school newsletters, student data, meeting agendas, news articles about the school, and professional development materials. One specific document titled, *The Weekly Focus*, is a school-wide newsletter emailed to teachers each week highlighting a number of topics including professional development sessions, important reminders about upcoming events taking place at the school, and information about various school-based initiatives and how teachers should proceed with implementation. I began my analysis by first reading each newsletter to gain a deeper understanding of the school context. The primary classroom materials I collected included WG lessons, teacher-created assignments, and student work. These materials were used to support information provided in the interviews and classroom observations. In

addition, these materials provided insight into the contextual factors that might influence teacher sensemaking.

3.4.5.5 Assessment data

Assessment data included a pretest administered prior to the intervention and a posttest administered shortly after instruction of the WG resources. In addition, a delayed posttest was administered five months after instruction ended. Assessments were scored by both members of the research team. With the support of the University's Statistical Consulting Center, I analyzed the results with appropriate descriptive statistical analysis including calculating the mean and standard deviation. A paired t-test was calculated to determine differences in scores from the pretest to the posttest and posttest to the delayed posttest.

Research questions, corresponding data sources, and plans for analysis are outlined in Table 3.

Table 3. Research questions aligned with data sources and analysis

<u>Research Questions</u>	<u>Data Sources</u>	<u>Data Analysis</u>
What was the effect of a cross-content vocabulary intervention on student learning of general academic vocabulary words?	-pre- and post-tests -delayed posttests	Descriptive statistical analysis to determine changes in pre/post scores and if students maintained knowledge of word meanings from posttest to delayed posttest
How did teachers make sense of the intervention and how did their sensemaking shape implementation of the program?	-interview transcripts -district/school documents -classroom materials -teaching logs -classroom observations	Open coding with attention to how teachers implemented the program (time spent on the program, adaptations, student engagement) and attention to factors that might influence how teachers made sense of the program (background knowledge, experiences, policy, social context)

3.4.6 Reliability and validity

In this investigation, the findings are limited to the small number of participants in one school, posing a challenge to the generalizability of the findings. Rather than consider how these results can be generalizable, it is important to consider the notion of transferability (Merriam, 2009). The focus of case study research is not to make broad generalizations, but to provide an in-depth understanding of a case. Not only can the information gleaned from one case be transferred to similar situations, it can also counter existing beliefs about a particular issue (Flyvbjerg, 2006).

Analysis of multiple data sources including observations, interviews, document analysis and assessment data, provided a detailed description of the implementation of the intervention. Rich descriptions of how teachers and students responded to the intervention and the contextual factors that shaped the implementation are also presented. In doing so, the reader can determine if these findings can be applied to their own experiences.

In addition to facilitating the development of the case, triangulation affords researchers the opportunity to confirm data across sources, increasing the credibility of the findings. More specifically, data source triangulation and methodological triangulation were two protocols that I utilized during data collection and continued throughout the process of analysis. Since the observations and the completion of teaching logs took place throughout the implementation of the program, I used the information from those data sources to confirm or contradict what I learned from teacher interviews. I considered interview responses that confirmed the observational data or another data source to be reliable.

In conducting this research, I was involved in all aspects of the study. This included designing the supplemental materials, providing the WG resources, preparing and distributing student folders, presenting the program to the teachers, and providing support in implementing the program. In addition, I served as the primary “instrument” for collecting and analyzing the data (Merriam, 2009). Therefore, it was critical that I remained mindful of my position as the researcher and the potential biases that I brought to the study. I am a former classroom teacher and reading specialist. Although my background as a classroom teacher and reading specialist led me to conduct research in classrooms, these experiences influenced how I interacted with teachers and what I observed. As a former reading specialist who worked extensively with struggling readers, I have firm beliefs of what characterizes effective literacy instruction.

Although I was supposed to only observe, I found myself taking on a more evaluative stance on Ms. Snyder's instruction. At times it was difficult not to intervene and support Ms. Snyder's instruction. Although I have experience as a classroom teacher, I have never taught in an urban school. As a White researcher, I was surprised by the dynamic context and the challenges that students faced inside and outside of school.

4.0 FINDINGS

This section provides a summary of findings related to each research question.

4.1 RESEARCH QUESTION 1: EFFECTS OF THE INTERVENTION ON STUDENT LEARNING OF GENERAL ACADEMIC VOCABULARY WORDS

Over the course of ten weeks, students at Dunbar Academy were taught approximately six words for each unit of the WG program for a total of 36 words. Words were taught on a daily basis in the social studies class and in topically related 20 minute lessons once a week in the science and math classes. In comparison, students at Rosa Parks Charter School were taught with a vocabulary enrichment program which was a daily part of students' literacy instruction during their English language arts class. There was no overlap in the target words.

The social studies teachers at Dunbar and Rosa Parks administered a pretest in September, two weeks prior to instruction and a posttest, two weeks following instruction. The pretest and posttest consisted of 20 multiple choice questions focusing on 20 selected vocabulary words taught over the course of the intervention. The pretest and posttest items were the same, but the questions were reordered. A delayed posttest was administered five months following the intervention to determine if students had retained their knowledge of the words. Although the

same words were tested, the items on the delayed posttest differed from those on the pretest and posttest.

Test scores were analyzed for 14 Dunbar students and 13 Rosa Park students using paired *t*-tests. Although the racial and socioeconomic demographics were similar for these two groups, it is important to point out that the number of students performing at or above the level of proficiency in reading as measured by the state reading assessment differed. Only 4 of the 14 students at Dunbar scored at or above the level of proficiency in reading as compared to 10 of the 13 students who attended Rosa Parks.

As shown in Table 4, all Dunbar students demonstrated gains in vocabulary learning, while Rosa Parks students did not. Most importantly, students falling in the basic/below basic categories at Dunbar showed statistically significant positive differences in their learning compared to Rosa Parks students and maintained those differences on the delayed posttest.

Table 4. Vocabulary test scores for students at Dunbar Academy and Rosa Parks Academy

School/Student Scores on State Reading Assessment	Pretest M (SD)	Posttest M (SD)	Delayed Posttest M (SD)
Dunbar Basic/ Below Basis (N = 10)	6.1 (2.29)	10.2 (5.12) *	10 (4.24)
Dunbar Proficient Advanced (N = 4)	8 (1.41)	13.5 (3.87)	11.5 (4.04)
Rosa Parks Basic/ Below Basic (N = 3)	7.3 (1.52)	6.0 (1.0)*	
Rosa Parks Advanced/ Proficient (N = 10)	9.6 (2.59)	9.4 (3.89)	

* p = 0.0163

Note. All assessments included 20 items.

These positive results were encouraging but also surprising. My observations throughout the intervention revealed critical implementation issues as will be described in the section below.

4.2 A CHALLENGING AND CHANGING CONTEXT

Earlier I explained that four of the six teachers who we worked with the year before had been assigned to different positions in the school or district. We learned of these changes only weeks before the start of the school year. Ms. Snyder, a former eleventh grade social studies teacher at Dunbar was assigned to teach social studies at the middle school level. Her colleague, Ms. Jeffries, also a former eleventh grade teacher was assigned to teach English language arts (ELA). Although I had not worked with the high school teachers at Dunbar, I instantly recognized both teachers. I recalled attending the district in-service the previous year when Ms. Jeffries and Ms. Snyder presented on how they planned and implemented instruction in a co-teaching model. The principals highlighted their work as a model for effective planning and instruction. Both teachers expressed that their decision to move to the middle school was based on the promise that they would continue co-teaching ELA and social studies.

This co-teaching format would have allowed for a longer class period and integration of social studies and ELA, yet it was decided three weeks into the school year that social studies and ELA would be taught in isolation. This change proved to be disruptive for both the students and Ms. Snyder as she attempted to implement the classroom rules and programs introduced by Ms. Jeffries the week before. During my observation of their co-teaching lesson, it was Ms. Jeffries who led the students in developing rules for the classroom. These rules were posted in

the classroom and discussed in addition to other grade level discipline plans. During the first class meeting following the change, many students questioned why they were not being taught by both teachers as they had been the week before. Shortly after learning that she would not coteach with Ms. Snyder, Ms. Jeffries decided not to participate in the WG program except for supporting students' writing of the argumentative essay at the end of the week. Her decision not to participate did not appear to be an issue with school administrators.

Because Ms. Snyder was on her own teaching students in middle school for the first time, we spent a significant amount of time during the first weeks of implementation to support her. For example, during our meetings we discussed classroom management strategies, as well as how to implement the daily WG lessons in a 45-minute class period. We highlighted the importance of clear expectations and procedures for the classroom, including a system to start and end class at the same time each day. We also suggested having her students seated in pairs or small groups to facilitate the interactive participation structures outlined in the WG materials. We had hoped that these changes would make for a smoother implementation of the program and increase student engagement.

In addition to adjustments needed by Ms. Snyder, students too needed to adjust. The sixth graders came from several different elementary schools in the district. Therefore, they were figuring out how to navigate a new school with unfamiliar teachers and students.

The change in the co-teaching plan meant that Ms. Snyder had to develop the curriculum that she would teach. She was eager to use the WG materials because they provided a curriculum. We searched out other resources in the building that could be used to support the social studies curriculum. We discovered a set of textbooks with useful information as well as

maps that could be used to enhance the WG resources. Ms. Snyder was eager to make use of these resources because her classroom did not include maps or reference books.

Issues in Ms. Snyder's classroom were influenced by conditions in the school. For example, I noticed that it was difficult for Ms. Snyder to complete the WG lessons as planned because transitions between classes and classroom management limited the amount of time that could be dedicated to instruction. As in the case of many new teachers, a disproportionate amount of time was spent on addressing student behavior and redirection. One of the issues that appeared to contribute to the disruptions in her class involved the absence of a system to indicate the starting and ending time of each class resulting in different classes being dismissed at different times. At times, this made it challenging for a smooth transition between classes. For example, if teachers were not on the same schedule to begin and end classes that day, students would wait in the hallway to be admitted to their next class. This proved to disrupt instruction as illustrated by the following observation note:

As students completed their exit activity for the day, I could hear loud talking and shouting in the hallway. One student quickly got up from his seat to look out the door. Other students soon followed as Ms. Snyder calmly walked over to the students and directed them to return to their seats and complete the exit activity. "We are not ready yet," she said in a quiet voice and reminded the rest of the students to continue working on their exit activity. A few students finished writing their sentences in their notebook, while the rest of the students appeared more interested in what was going on in the hallway (S. Snyder, fieldnote, September 23, 2014).

The lack of specified times to begin and end class sessions also affected the manner in which students arrived for class. Despite Ms. Snyder's organization and preparedness, it took a significant amount of time for students to begin working when they entered the classroom. Ms. Snyder designed daily warm-up activities that were posted on the white board. Students were to

complete the warm-up activity in their notebooks as soon as they entered the classroom. This procedure was explained to the students, yet there did not appear to be a sense of urgency to complete it in a timely manner. Students arrived at different times throughout the period making it difficult to have all students ready to begin the lesson. Therefore, instruction was delayed. Attendance was also an issue. During the course of the intervention, I noted the attendance fluctuated anywhere from 12 to 19 students. Ms. Snyder also recognized this as an issue adding that students moved schools within the district and that her classroom roster changed a number of times since the beginning of the school year.

When meeting with Ms. Snyder to discuss the issues surrounding classroom management, she attributed it partly to not teaching with Ms. Jeffries. After years of co-teaching, each teacher adopted different roles in the classroom, particularly on how they managed the classroom and student behavior. Ms. Snyder described their approach as playing “good cop, bad cop.” She explained that she had relied on Ms. Jeffries to handle behavior issues in the classroom therefore she did not feel that she had developed strong classroom management skills of teaching during that time when playing the “good cop” (S. Snyder, fieldnote, September 24, 2014). Consequently, without these skills, much of her instructional time was dedicated to redirecting student behavior and less on instruction.

In addition to management issues in the classroom, there were a number of scheduling changes and new teacher assignments that appeared to contribute to the sense of confusion. The schedule of classes changed multiple times during the intervention to accommodate student tardiness and the need to support struggling readers. To address the problem of students coming in late and missing instructional time, the building principals adjusted the schedule so that students’ academic subjects were moved from first period to second period. The schedule was

adjusted again to accommodate a reading intervention period designed to provide additional support for the high number of students reading below grade level.

Not only were there changes in scheduling, there were also changes in staffing. The science teacher resigned shortly after the school year began. The person hired to help with student discipline was unable to accept the position due to illness. These positions remained vacant during the implementation of WG.

Situations occurring in the community also impacted the school. As in many urban schools, students faced a number of challenges related to violence in their communities. During our time at the school, we learned that shots were fired at students as they walked to school one morning. Tragically, one of those students was shot and killed outside his home a few weeks later. Obviously, this had a tremendous impact on the school community. Counseling sessions replaced regular classroom instruction.

Understanding this context is critical for understanding how WG was enacted at Dunbar Academy. In my role as researcher, I was not prepared for the implementation issues and the uncertainty those issues created. I was surprised at the amount of time it took to get the program off the ground and the number of adjustments that were made to the program. I also was aware that there were efforts to address the challenges.

4.3 EFFORTS TO ADDRESS CONTEXTUAL ISSUES

School administrators and teachers appeared to work diligently to address the various academic, social and emotional aspects of the students in the school. This was evident in the multiple programs and initiatives that they hoped to have in place for the school year. Professional

development sessions for teachers to gain a better understanding and skills to support students experiencing trauma in their lives were implemented throughout the year, in addition to student mentoring and tutoring opportunities. Small group reading instruction sessions tailored to meet the needs of students at their instructional level were also implemented later in the year.

Because of the multiple initiatives being implemented in the building and the schoolwide professional development goal which focused on lesson planning, the weekly debriefing sessions that we had planned with teachers were replaced by individual meetings based on the availability of each teacher. Ms. Snyder was always willing to take the time to meet and discuss the process of implementation. She was open to the suggestions we offered related to classroom management strategies, as well as implementing the WG program.

It was clear, however, that instruction in Ms. Snyder's classroom was greatly compromised by student behavior, the necessary adjustments to teaching without Ms. Jeffries, and her own limited experience in dealing with middle school students and the middle school curriculum. These issues influenced her decisions in implementing the WG curriculum.

4.4 PLANNED VS ENACTED CURRICULUM

In this section I describe how teachers implemented the WG program in the social studies, math, and science classes.

4.4.1 Social studies class

I was particularly interested in understanding how Ms. Snyder used the WG resources in her social studies class, given that it served as her primary curriculum. I spent time observing in Ms. Snyder's classroom and reading her teaching logs, yet the information gleaned from these data sources did not capture how she made sense of the intervention and her thinking behind the decisions to make the changes. In the following sections, I first provide descriptions of the planned curriculum and the enacted curriculum, and then discuss Ms. Snyder's sensemaking around the program and the factors that influenced her decisions to make the adaptations that she revealed in her interview comments.

The WG curriculum is organized into these activities: (a) Day 1: Introducing the Words, (b) Days 2-3: Readings and Related Activities, (c) Day 4: Debate, and (d) Day 5: Argumentative Writing Essay.

4.4.1.1 Introducing the words

The WG program introduces focus words in a contemporary context through a Reader's Theater script. Students engage in a Reader's Theater, a fictional play which includes four characters who are middle school students. They debate a modern-day topic that is related to the unit's essential question. For example, the Reader's Theater in Unit 1 titled, *The Pharaohs of Ancient Egypt: Oppressors or Great Leaders?* features four students debating one student's claim that his parents are being *oppressive* by cancelling the family's cell phone plan to save for a Disney vacation. The purpose of Reader's Theater is twofold. First, it introduces students to the vocabulary words in a contemporary context that elicits student interest in the topic. Second, it

prepares students for the debate later in the week by highlighting features of argumentation, including claims, evidence, and counterarguments.

So, for example, the first day of instruction using the WG plan and resources would go like this. The students would be given a copy of the Reader's Theater script. The WG teacher guide directs the teacher to read the script aloud to the class to model fluent reading. The teacher guide also outlines specific ways to follow the teacher's modeled reading including having students act out the roles of the characters, having the teacher read the script aloud repeated times, and having students work in small groups playing the roles of each character. Also included in the materials is the following statement, "Some teachers also project the selection on an overhead screen while it's being read" (SERP, 2012, p.1.02). Following the skit, students complete activities that require them to identify the different views presented in the skit and to practice how to participate in a debate, including presenting claims and evidence.

During the first session, students are also provided with a word chart that includes word meanings, example sentences, forms of the words, and space for students to write their own examples or sentences for the words. The teacher is directed to write the focus words on the board and explain the definitions of the words as provided in the word chart.

For the first two weeks of the intervention, Ms.Snyder introduced the words through the Reader's Theater activity as outlined in the WG program. She followed the suggestion provided in the teacher guide to have four students perform the skit while the rest of the class followed along in the script. The following excerpt is from my fieldnotes during the first week of implementation.

Ms. Snyder asks students to open the red folders and take out their packets located on the right side. She announces, "We are going to learn about Egypt, but our big question is, 'Do you think the Pharaohs were oppressive, wouldn't let you do anything, mean or were

they great leaders?’ She directs students’ attention to the Reader’s Theater script. One student asks, “Who would name someone Ingrid?” as other students comment on the names of the characters. Ms. Snyder ignores the comments as she calls on four students to the front of the room to read the Reader’s Theater script. As two of the four students reluctantly walk to the front of the room, the remaining students talk to each other. Devon, one of the actors, looks at Ms. Snyder and says, “I don’t want to do this,” as he hides behind the overhead screen. Martin slides his body down the wall and sits on the floor with a bored expression on his face while he smiles coyly at his friends seated at their desks. Jasmine and Brittany stand in front of the class waiting patiently for their classmates to stop talking and for the boys to stand up. Shouts of “shut up!” fill the room as half the class continues to talk and laugh with each other, while the other students try to get the room quiet. Ms. Snyder walks to the front of the room. As she walks by, Jasmine whispers to her, “You have to be more aggressive.” Then Jasmine reads the first line of the script in a loud voice, startling her classmates as they look up from their conversations. The boys reluctantly join the reading as some of their peers continue to talk and snicker, while the rest of the class appears interested in watching their classmates perform (S. Snyder, fieldnote, September 22, 2014).

Ms. Snyder’s attempts at implementing Reader’s Theater is representative of other instructional routines that she implemented during the first weeks of the WG program. The above exchange took place the first day following the change from co-teaching with Ms. Jeffries to teaching alone. This may have influenced instruction that day. She implemented Reader’s Theater again in Unit Two in a similar fashion. In her teaching log dated September 30, 2014 she reported that there had been a “major ongoing bullying issue in the sixth-grade” and that it was “a major distraction that took away class time.” She also felt that not introducing students to the words and definitions prior to the lesson may have added to the confusion. When I asked her about her decision to adapt some of WG lessons, she discussed her concern about implementing Reader’s Theater. She explained that in addition to the time constraints, “Something else that I

had to kind of look at differently was the reader's theatre with the behaviors that we have going on at the school, it just – and the maturity level, it didn't seem to work very well with a lot of my students" (S. Snyder, interview, February 24, 2015).

The following week Ms. Snyder replaced the Reader's Theater script with an instructional sequence in which she introduced students to the words by displaying the words on the white board. She then proceeded to ask students what they knew about the meanings and to provide examples. The following description is from my fieldnotes:

Ms. Snyder directs students' attention to a powerpoint slide containing the "Words of the Week" projected on the front screen. "Compete," Ms. Snyder announces and asks students for examples of situations where someone would compete. A number of students respond, listing various sports. Ms. Snyder then asks for two student volunteers. David and Donte walk to the front of the room as Ms. Snyder stands with her legs spread out, hands on her hips. She directs her two volunteers to do the same and asks the class, "How do we look? Do we look the same?" Some students nod their heads as others point to Donte and argue that he does not look the same since his head is down. Ms. Snyder shakes her head and says, "No, we look the same, we are conforming." Some students continue to argue as she moves on and reads the definition, "Conform means to act the same," and adds the military as an example for conforming before discussing the next word.

Ms. Snyder: Democracy, what is an example or tell me what it is.

Layla: voting?

Ms. Snyder: It's a form of government where people get to vote. Do we elect a president?

Devon: I don't.

Ms. Snyder: You will! Pointing to the next word, What does it mean to be elite? Are there many Panthers? [Ms. Snyder is referring to the school's behavior management system in which Dunbar students who display leadership skills are considered Panthers]

Students: No

Students: Yes

Ms. Snyder: Well, you have to earn that position. What does elite mean?

Dajah: It means your special?

Ms. Snyder: Yes! We're going to find out there is a group in Greece who are the elites.

Ms. Snyder directs students' attention to the next word, individualist and asks, "Is anyone an individualist?"

Robert: Doesn't that mean one?

Ms. S: Yes. You think of yourself first. For ostracize we had good examples from the warm-up. [Ms. Snyder is referring to responses students provided as part as a daily warm-up activity in which she asked students for situations where a group might ostracize someone.]

Student examples included taking credit for someone else's work and going behind another person's back. At the end of class, Ms. Snyder reminds students to complete the word chart for homework (S. Snyder, fieldnotes, October 6, 2014).

For the final WG unit, Ms. Snyder returned to the Reader's Theater with her own adaptations. Unlike the first two units, she did not have students perform. Instead, students worked in pairs to read the script. She also created a guided reading sheet in which she divided the script into shorter segments with questions about each segment that students answered with partners as they read. She reported that students "worked well in their pair groups and were engaged in the activity" (S. Snyder, teaching log, November 17, 2014). In her teaching log, she rated the level of student engagement for the activity as a 4 out of 5 with 5 being the highest level of student engagement. She also noted that students "enjoyed reading the 'student' perspectives and choosing who they agreed with and why" (S. Snyder, teaching log, November 17, 2014). These guided reading sheets were also used with a number of readings in the WG program aside from the Reader's Theater script which will be described in more detail in the following section.

4.4.1.2 Readings and related activities

Following the Reader's Theater activity in the first session, WG lessons focused on students building their background knowledge of the historical topic by reading and discussing short pieces of informational text. For example, the readings for the unit titled, *The Pharaohs of Ancient Egypt: Oppressors or Great Leaders?* feature information about the geography and history of Egypt, including the role of the Nile River and the power of the pharaohs. These readings and related activities incorporate the focus vocabulary for the week, but also reinforces the features of a debate. Activities require students to analyze different perspectives of people living during ancient Egyptian times, as well as the importance of stating a strong claim and supporting it with evidence from the readings. A variety of reading formats and participation structures are suggested, including partner reading, reading the text as a class, and the teacher reading the text aloud. A participation structure that is repeated throughout the units is turn-and-talk. All readings intend to prepare students for the debate focused on the essential question.

Ms. Snyder used the WG readings with her students, but she implemented them in a more constrained way. For example, she adapted how the text was read and the types of questions she posed to students. Rather than having students read through the text and pose open-ended questions using a turn-and-talk participation structure as outlined in the WG materials, Ms. Snyder divided the text into shorter segments, projected the segments on the white board, and guided students' reading of each segment where she directed them to underline or highlight important ideas. She also directed students to write important ideas in the margins of the text. She adapted the questions as well, moving from the more open-ended questions in the WG materials to questions that required students to fill in the blank. See Figure 2 for an example of a guided reading sheet Ms. Snyder created for her students. Figure 3 shows the WG activity.



City-states in Ancient Greece

Assigned: Tuesday, 10/7/14, Due: End of class
Worth: 25 Classwork points

6 th grade
+ _____ / 25

Directions: Use page 3.05-3.06 in your student packet to answer the questions below.

WHY SO MANY CITY-STATES?

1. Why was Greece divided into independent city-states? Explain. (4pts)

2. Did Greece have one powerful leader? Explain. (4pts)

3. How did trading work between Greece's city-states? (4pts)

4. *Think* – Why would these city-states compete with each other? (Think about leadership, geography and trading). (3pts)

Leadership: _____

Geography: _____

Trading: _____

THE CITY STATES COMPETE IN WAR AND THE OLYMPIC GAMES

5. The first Olympic games were held in _____ (country) in _____ B.C.E. (year).
6. Who competed against each other? _____
7. The Olympic games were held every _____ years (and still are).

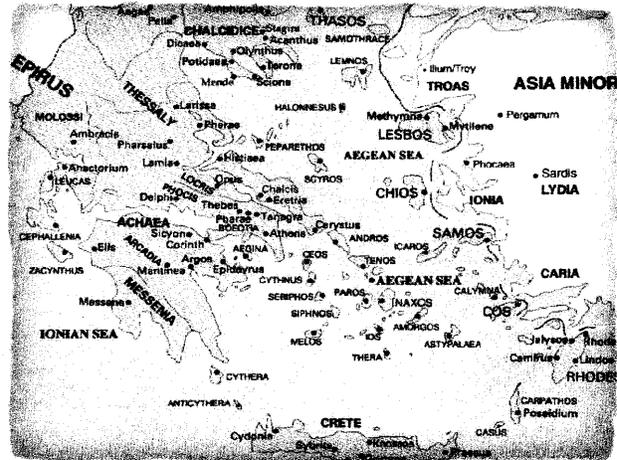
Turn Over →

Figure 2. Teacher-created guided reading sheet

Geography and the Greek City-States

Why so many city-states?

Greece was divided into hundreds of what we call “city-states.” These city-states were independent but part of the larger territory called Greece. Why was Greece divided into **competing** city-states? Geography had a lot to do with it. Greece has small areas of **fertile** land divided by many rugged mountains (see map at right). A long shoreline and hundreds of small islands gave city-states good harbors for seaports, which became important trading centers. Because each city-state was independent, each had to develop its own trade partners. Furthermore, unlike Egypt with its single, powerful ruler, Greece was characterized by its many governors and governments for each **individual** city-state. City-states were fiercely **individualistic** and independent.



TURN, TALK, AND THEN WRITE!

Imagine that you are a super villain (like Magneto or Megamind) and that you are living in ancient Greece. Being the **elitist** that you are, you want to conquer all of the **individual** city-states and become the sole ruler of the entire land. Using the paragraph and map above, list two major challenges you would face in uniting Greece. and how you would overcome each.

- 1)
- 2)

Can you think of ways to overcome or address the challenges?

The City-States Compete in War and in the Olympic Games

The first Olympic Games were held in Greece in 776 BCE. Different Greek city-states **competed** against one another, just like different countries **compete** against each other in today’s Olympic Games. Also like today, the Olympics were held every four years. Unlike today, athletes **competed** without wearing any clothing! At first, these games were mainly foot races. Later, wrestling, javelin throwing, chariot racing, and other contests were added. Only men **competed** for fame and honor, both for themselves and their city-state. Winners were honored as heroes. They achieved the **individual** excellence the Greeks admired in so many ways. Though city-states fought frequently and war was a constant reality in Greek life, all of the city-states chose to stop fighting during the Olympic Games.

TURN, TALK, AND THEN WRITE!

The paragraph above suggests that the Greeks greatly valued “**individual** excellence.” What is this and why do you think the Greeks admired it?

According to the paragraph, the Greek city-states stopped fighting during the Olympics. Even today, people around the world set aside differences to cheer on Olympic athletes, like Guor Marial (see right), from the brand new country of South Sudan. What is it about the Olympics that brings people together?



Guor Marial
Credit: Matt Kieffer from London, United Kingdom



Figure 3. Word generation activity

Ms. Snyder found this adaptation to best fit the needs of her students as illustrated in the following interview excerpt:

I tried to cover one to two pages in the packet each day, and I take each one of those – the way it was set up originally is that the students would read maybe a page or two and then do the turn and talk. But for my students I didn't see that being successful so I reworked it to have the reading with purpose style questions where they would read a chunk in the text, especially with my struggling readers, it was a better solution for them. They'd read a chunk and then answer maybe one or two questions to help them with their comprehension and understanding of each chunk that they were reading instead of just reading it straight through. (S. Snyder, interview, February 24, 2015)

Ms. Snyder often commented on the range of reading abilities in her classroom and expressed concern for the number of students in her class reading below grade level. She added:

I have quite a range of ability in that class – in especially the sixth-grade class, there is a large range of ability. So, it helped the students that were maybe very, very low. It gave them a way that they could enter the text and figure out what they were doing, but it also still challenged the students who were a little bit higher level. (S. Snyder, interview, February 24, 2015)

Ms. Snyder's comments indicate her concern about students' reading abilities. During the time of the intervention, 70% of her sixth-grade students did not meet a level of proficiency in reading as measured by the state reading assessment. Therefore, Ms. Snyder felt the adaptations she made to the readings were necessary and would support students' comprehension across all ability levels.

4.4.1.3 Debate

Each WG unit is designed to culminate in a debate related to the essential question. For example, the readings and related activities in the unit titled, *The Pharaohs of Ancient Egypt: Oppressors or Great Leaders?* include readings about the historical context, but also activities that encourage students to engage in perspective-taking. Students either choose or are assigned to one of two sides of the debate. They work in these groups to apply the knowledge they learned from the

various readings and activities to make claims and develop arguments to participate in the debate about the essential question. In addition, students also serve as judges to evaluate how their classmates present each side of the argument and provide constructive feedback. Debate activities are designed to scaffold students' ability to engage in debates. For example, in the first unit the focus of the debate is for students to provide a solid claim with supporting evidence. In the second unit, students are introduced to the notion of counterargument and ways to effectively challenge the opposing group's argument.

Ms. Snyder's students prepared for the debate by completing the activities, but they did not enact the debate every week. To prepare for the debate to address the essential question, *Was it irresponsible of the people of Pompeii to live next to Mt. Vesuvius?* Ms. Snyder had her students complete an activity in the WG program that asked them to evaluate facts and use those facts to support a claim. The WG activity required students to read a list of facts related to Pompeii's economy and beliefs, as well as the frequency of earthquakes and the eruption of Mt. Vesuvius. Students evaluate each fact to determine how it might support their claim related to the essential question. The WG activity shown in Figure 4 was adapted by Ms. Snyder as shown in Figure 5.

Focus Words

argue | irresponsible | verify | compelling | exempt | fertile

You will be working with your group to prepare for a debate on the weekly topic question.

Was it irresponsible of the people of Pompeii to live next to Mt. Vesuvius?

Go back to the Spacebook debate on page 4 and review the claim each character supports and why. Your group will be defending one of the two main claims:

During the debate, your group will try to convince the class that yours is the best claim. You can use these sources to find evidence to support your group's claim:

- Reader's Theater
- Pompeii Fact Sheet (next page)

Underline the evidence you find and write short notes in the margins to show how the evidence supports your claim. Also, remember to use as many of this week's focus words in your notes as practice for the debate!

Claim 1:
The people of Pompeii were being irresponsible when they decided to live next to Mt. Vesuvius.

Claim 2:
The people of Pompeii were not being irresponsible when they decided to live next to Mt. Vesuvius.

Figure 4. Word generation activity

Preparing for the Debate: Pompeii Fact Sheet

Earthquakes in Pompeii

- There were many earthquakes near Pompeii.
- Seneca, a famous and educated Roman, wrote about the scientific causes of earthquakes. He wrote about a big earthquake that happened in 63 A.D., 13 years before Mt. Vesuvius erupted. This earthquake caused major damage to the city of Pompeii.
- After the earthquake in 63 A.D., people in Pompeii did not leave the city. Instead, many people decided to stay and rebuild their homes. They were working hard to improve the city when Mt. Vesuvius erupted.
- Earthquakes can be a sign that a nearby volcano will erupt.

The Eruption of Mt. Vesuvius

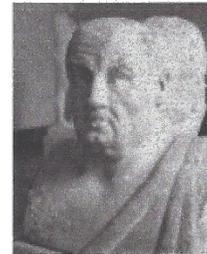
- Thousands of people from Pompeii were killed by the eruption of Mt. Vesuvius.
- The eruption of Mt. Vesuvius lasted for 24 hours. The people who left Pompeii as soon as the eruption started survived.
- During the eruption of Mt. Vesuvius, people thought it was safer to stay in Pompeii and take shelter rather than try to escape. They thought the eruption would pass, and they would be safe.
- There were a few early signs that the volcano would erupt. Smoke was coming out of the volcano days before the eruption. There were also earth tremors for a few weeks before Mt. Vesuvius erupted.
- Historians say the people of Pompeii did not know Mt. Vesuvius was a volcano, so they were not prepared for it to erupt.
- Some historians believe scientists living in Pompeii ignored the warning signs that the volcano was going to erupt.

Pompeii's Economy

- The economy of Pompeii was very good. The port of Puteoli, near Pompeii, was one of the largest trading sites in the area.
- The land near Mt. Vesuvius was very fertile and produced many important crops.
- After the 63 A.D. earthquake, many Pompeii residents decided to stay because the economy was doing well.
- There were thousands of slaves in Pompeii who helped the city's economy, but they did not have the right to buy property.

Roman Beliefs

- According to Roman religion, gods and other creatures had supernatural powers that could control nature.
- Roman gods were fickle creatures who often ended up using their powers to fight one another. Romans believed that natural disasters like volcano eruptions and earthquakes were often caused by fighting between gods.
- Seneca's writings about earthquakes do not make any connections between earthquakes and volcanoes.



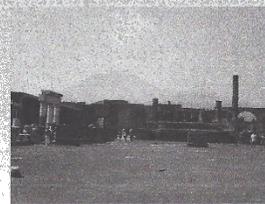
Seneca, Roman philosopher
<http://www.uh.edu/engines/epi2813.htm>



Cast of a human found in Pompeii. There are several large amphorae (pottery storage vessels) to the left.



Archeologists are still excavating Pompeii. This hole has been dug by an archeologist, who puts the dirt in buckets so it can be sifted through later. Objects in the dirt are then labeled and recorded.



View of Mount Vesuvius behind Pompeii. All images taken by Boston Public School teacher Jessica Tang, summer 2010. Used by permission.

Pompeii Matching Activity

Directions: Cut out the category boxes and paste them on the construction paper. Then cut out the numbered boxes and match them with each category.

Category Boxes: (cut these out)

<p>Pompeii is a great place to live!</p>
<p>No way, don't live in Pompeii!</p>
<p>Just the facts (about Pompeii)</p>

Numbered Boxes: (cut these out)

<p>① → There were many earthquakes near Pompeii.</p>	<p>→ The economy of Pompeii was very good. The port of Puteoli, near Pompeii, was one of the largest trading sites in the area.</p>
<p>② → Seneca, a famous and educated Roman, wrote about the scientific causes of earthquakes. He wrote about a big earthquake that happened in 63 A.D., 13 years before Mt. Vesuvius erupted. This earthquake caused major damage to the city of Pompeii.</p>	<p>→ The land near Mt. Vesuvius was very fertile and produced many important crops.</p>
<p>③ → After the earthquake in 63 A.D., people in Pompeii did not leave the city. Instead, many people decided to stay and rebuild their homes. They were working hard to improve the city when Mt. Vesuvius erupted.</p>	<p>→ After the 63 A.D. earthquake, many Pompeii residents decided to stay because the economy was doing well.</p>
<p>④ → Earthquakes can be a sign that a nearby volcano will erupt.</p>	<p>→ There were thousands of slaves in Pompeii who helped the city's economy, but they did not have the right to buy property.</p>
<p style="text-align: center;">The Eruption of Mt. Vesuvius</p>	<p style="text-align: center;">Roman Beliefs</p>
<p>⑤ → Thousands of people from Pompeii were killed by the eruption of Mt. Vesuvius.</p>	<p>→ According to Roman religion, gods and other creatures had supernatural powers that could control nature.</p>
<p>⑥ → The eruption of Mt. Vesuvius lasted for 24 hours. The people who left Pompeii as soon as the eruption started survived.</p>	<p>→ Roman gods were fickle creatures who often ended up using their powers to fight one another. Romans believed that natural disasters like volcano eruptions and earthquakes were often caused by fighting between gods.</p>
<p>⑦ → During the eruption of Mt. Vesuvius, people thought it was safer to stay in Pompeii and take shelter rather than try to escape. They thought the eruption would pass, and they would be safe.</p>	<p>→ Seneca's writings about earthquakes do not make any connections between earthquakes and volcanoes.</p>
<p>⑧ → There were a few early signs that the volcano would erupt. Smoke was coming out of the volcano days before the eruption. There were also earth tremors for a few weeks before Mt. Vesuvius erupted.</p>	 <p>Seneca, Roman philosopher http://www.ub.edu/engines/spi/2812.htm</p>
<p>⑨ → Historians say the people of Pompeii did not know Mt. Vesuvius was a volcano, so they were not prepared for it to erupt.</p>	
<p>⑩ → Some historians believe scientists living in Pompeii ignored the warning signs that the volcano was going to erupt.</p>	

Figure 5. Teacher-created adapted activity

Ms. Snyder reported that the adaptation she made to the activity was beneficial in that students “were highly engaged in the activity” and that “the activity was hands-on while meeting the objectives of students analyzing potential evidence for their argument paper” (S. Snyder, teaching log, November 21, 2014). Below is the field note of the activity:

Ms. Snyder asks students what they learned about Pompeii. After no response, Ms. Snyder asks, “What vocabulary word can you use to describe Pompeii?” A student responds, “Fertile?” Ms. Snyder smiles and exclaims, “Yes! And what is the name of the volcano in Pompeii...what happened?” A student explains that Mt. Vesuvius erupted and covered Pompeii. Ms. Snyder explains to students that they are going to use their knowledge and facts about Pompeii for the activity. She adds that this is a prewriting activity for the essential question, “Was it irresponsible for people to live in Pompeii?” Students are seated in pairs as Ms. Snyder passes out the matching activity sheet, large white construction paper, scissors, and glue sticks. These supplies are also listed on the white board along with the focus words for the unit. She directs students to the matching activity sheet and says in an enthusiastic sing-song voice, “If you think they are right, say ‘Hey, hey Pompeii!’” A few students chuckle as Ms. Snyder reminds them to, “Work with your partner, read it together, and decide where it fits.” As students complete the activity, they raise their hands for Ms. Snyder to correct their responses. Once they receive her approval they glue each statement under the correct heading. Ms. Snyder circulates the room reminding students to stay on task and commenting on how groups are progressing with the activity. “Twenty points for Michael for helping another student,” she says with a smile. Students continue working. “100 points for the class, our first group is done,” she announces after she checks the first completed chart.” She gives them the go ahead to glue down their arranged statements and hands each group member a sheet of white paper and a focus word. She directs students to write the focus word, definition, a sentence using the word, and a picture representing the word on the paper. This is to be completed after they have glued their sentences to the construction paper. I noticed that most of the class is engaged and working on both activities. (S. Snyder, fieldnote, November 20, 2014)

By adapting the WG lesson to make it a more hands-on learning experience with students reading, cutting, and pasting the statements related to the debate question, Ms. Snyder felt that students were more engaged. This was not the first time that Ms. Snyder suggested the importance of activities being “hands-on” to promote student engagement. In addition, the vocabulary activity she designed for students once the matching activity was completed provided students an opportunity to engage with vocabulary in a more direct way.

4.4.1.4 Argumentative writing essay

For the final WG session, students are supposed to write an argumentative essay based on the information in the readings throughout the week and their participation in the debate the day before. According to the WG teacher guide, the writing activity would “provide students with another opportunity to use and own the weekly focus words, and to practice identifying and evaluating claims and supports” (SERP, 2012, p. 1.13). Materials to support students’ writing include graphic organizers and activity sheets. For the first argumentative essay, students are provided with a graphic organizer and space to write their claim, evidence, and a concluding remark as shown in Figure 6. This organizer is similar to the organizers in Units 2 and 3. In addition, the teacher guide includes statements that encourage students to use as many focus words as they can in their essay.

Focus Words

order | proposal | value | oppressive | revolution | stability

Were the pharaohs oppressive rulers or great leaders whose actions were justified?

Today we will write a brief essay responding to our debate question:

A good persuasive essay includes:

1. A clear answer to the debate question that states your claim.
2. Two or more pieces of evidence that support the claim.
3. An explanation of how the evidence supports the claim.
4. A conclusion that summarizes the claim, or answer.

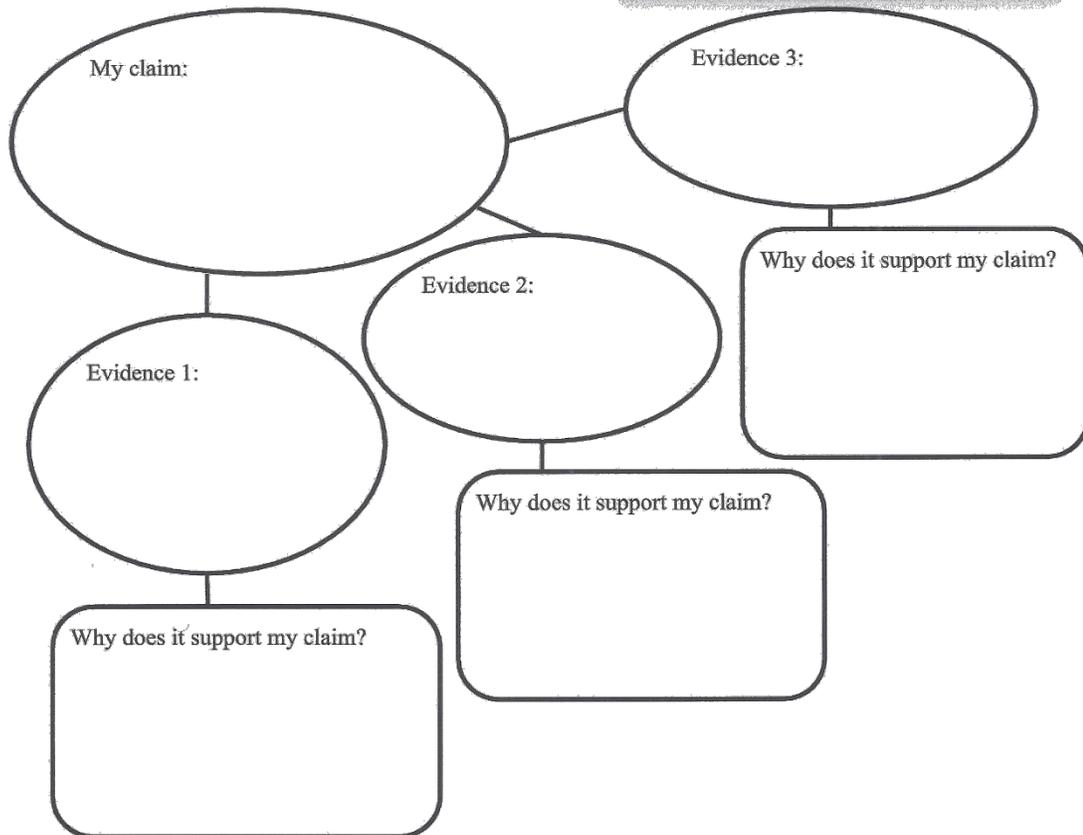


Figure 6. Word generation argumentative writing activity

Similar to the debates, students did not complete argumentative essays for every unit. Also, the graphic organizers and activities to prepare students for their writing were not used, but were replaced with a teacher-created organizer. Ms. Snyder developed activity sheets to engage students in completing sentence frames about the essential question which involved taking a position and citing evidence from the readings to support their position. Ms. Snyder used the KEDS model to support students' argumentative writing.

KEDS was developed by Ms. Snyder's colleague, Ms. Jeffries in collaboration with other ELA teachers years ago. It was intended to provide students with a structure for argumentative writing to restate the prompt, cite evidence, and how the evidence supports their position. Although Ms. Jeffries and Ms. Snyder felt that the KEDS method supported students' writing, Ms. Jeffries stated that at times "it sorts of limits students with the analysis portion" (K. Jeffries, interview, March 4, 2015). Figure 7 shows an example of how Ms. Snyder used the KEDS method for students' argumentative writing in the last unit of the WG program. Ms. Snyder reported that students were engaged in the activity and "...were passionate about their decision for their argument and used evidence from the previous day's matching activity." She added, "students did well with the 'teacher-created' graphic organizer" (S. Snyder, teaching, November 21, 2014).

Based on students' writing samples, it did not appear that incorporating the WG focus words was encouraged and this reminder was absent from the KEDS organizer. Ms. Jeffries acknowledged that for the argumentative writing activity that students completed in her class she did not ask students to use the vocabulary in their writing as encouraged by the WG materials.

Name: _____

Grade: 6

Respond to the following prompt:

Was it irresponsible of the people of Pompeii to live next to Mount Vesuvius?

irresponsible: not responsible, careless, reckless
Use the sources from the Pompeii matching activity.

Use the KEDS method of responding to an open ended prompt

K - Restate the prompt here. DO NOT add anything else here.

K – Use key words from the prompt in your topic sentence.

E – In 1-2 sentences, explain your thesis (K).

E – Explain your response

New Paragraph

D – Put your first piece of evidence from the text here. Write the textual evidence WORD FOR WORD. Include the author.

D – Provide two details (pieces of textual evidence) to support your response.

For example, (evidence #1) “ _____

_____”

Analysis – Explain in your own words how the evidence above proves your thesis (K).

This suggests that _____

Figure 7. Teacher-created KEDS writing organizer

D – Put your first piece of evidence from the text here. Write the textual evidence **WORD FOR WORD**. Include the author.

For example, (evidence #2) “ _____

_____”

Analysis – Explain in your own words how the evidence above proves your thesis (K).

This reveals that _____

New Paragraph

*S- Sum up with a final thought that drives your point home.
(What examples can you connect to your thesis and provide a final insight?)*

S – Explain again why you are right in your own words. Provide examples from your own life or society.

In conclusion, _____

****Now write your final copy on lined paper.
Write everything on this sheet that is *in bold*, including what you wrote.**

4.4.1.5 Supplemental activities

In addition to the adaptations Ms. Snyder made to the WG materials, she also designed supplemental activities to support students' knowledge of word meanings. On most days, students completed warm-up and exit activities that engaged them in responding to a prompt that included a vocabulary word. These activities were graded and counted for 10 points toward students' final grade. Students were also rewarded with points and tickets for completing the activities as part of a school-wide behavior program. Therefore, it appeared that students were motivated to complete the activities. Examples of the various warm-up and exit activities are provided below:

*Why might a group **ostracize** someone? (ostracize: to exclude a person or group)*

*What should a leader do to keep **order** and prevent revolts?*

As students entered the room, a question incorporating a focus word was projected on the board. Students completed the activity in their notebooks and discussed their responses before beginning the WG lesson for that day. For the exit activity, Ms. Snyder would design a question incorporating the content and at times the vocabulary students had learned during the lesson. Similar to the warm-up activity, the question would be projected on the board and the students were required to respond in their notebook. Notebooks were collected at the end of the class period. The following excerpt illustrates how the warm-up activity was typically completed in Ms. Snyder's classroom:

As students walk in the dimly lit classroom, classical music plays softly in the background. Projected on the white board is the following warm-up activity for the day:

One of our words this week is proposal.

proposal: a serious plan or suggestion for people to consider

What are some proposals you have for our school to make it better? Explain.

Red folders labeled with students' names are on each desk along with a large Ziploc bag

which contains a manila colored notebook and pencil. Students walk in the room, some mill around talking to classmates, sharpening their pencils, while others sit in their seats and begin working on the warm-up activity. I notice an overhead timer that counts down the amount of time that students have to complete the warm-up activity as I hear Ms. Snyder reminds students of the time as well. A few students ask to use the restroom. Ms. Snyder responds, “Did you start the warm-up?”

As students write their responses, Ms. Snyder announces, “Two more minutes,” as she circulates the classroom. “I like Alex’s answer,” she announces as she places a ticket on the corner of his desk. A few students look up and glance at Alex’s notebook. Ten minutes into the period, Ms. Snyder counts, “10-9-8-7-6-5-4-3-2-1.” Some students stop talking and look up. Ms. Snyder asks for a volunteer to read the warm-up, then proceeds to call on students to share their responses.

Martin: Send school supplies to our school.

Ms. S.: That’s nice.

David: Do better things.

Ms. S.: What do you mean?

Before David has a chance to explain, another student interrupts, “I have one, no cussing!” Kayla rolls her eyes and retorts, “You know that’s never going to end!” Ms. Snyder appears to ignore her comment as another student says, “Have a class president?” Ms. Snyder smiles and responds, “Class president, that’s a good one!” She then asks students to place their notebooks back in the Ziploc bags as she collects them and places all bags in a bin labeled, “Grade 6.” She posts an agenda on the white board listing the class activities for the day and begins the WG lesson (S. Snyder, fieldnote, September 24, 2014).

Ms. Snyder explained that the warm-up and exit activities were designed to “reinforce the vocabulary and to get them to use the vocabulary in their own way” (S. Snyder, interview, February 24, 2015).

Ms. Snyder created additional activities for the words including sentence stems to support students’ writing of sentences, crossword puzzles, vocabulary pyramids, and word posters that

engaged students in writing a sentence using the word and creating an illustration for the word. She also made use of the social studies textbook and created activities to complement or add to the content in the WG curriculum.

4.4.2 Science and math teachers

While Ms. Snyder's social studies class was the main focus of my attention, I was also interested in how the other content area teachers enacted their instruction of the weekly WG lessons. Members of the research team observed class sessions and collected teaching logs from the science and mathematics teachers. As with Ms. Snyder, contextual factors at the building level influenced enactment, yet not to the extent as in the social studies class where lessons were implemented every day. For the math and science teachers, the planned and enacted curriculum were more aligned, but they did reveal the challenges of implementation as discussed in the following paragraphs.

Prior to each WG lesson, the teachers reviewed the focus words and meanings. A typical instructional sequence implemented by the math teachers involved Mr. Henderson providing a brief review of the focus words with students. He made use of word cards and asked students for word meanings and examples for the focus words. Following the review, Mr. Marvin, Mr. Henderson's co-teaching partner, implemented the WG lesson. Although both math teachers reported that students appeared to be familiar with the meanings of the focus words, lessons tended to take longer than 15-20 minutes as suggested by the WG program. This was due to the time needed to reteach some of the math concepts included in the WG activities. Mr. Henderson explained:

Sometimes the math activity was either – I don't want to say irrelevant, but not something that we were focused on. Sometimes it may have been something that we had to teach more previous background knowledge on before [the WG lesson] because it seemed like it was a completely new concept to a lot of kids. (M. Henderson, interview, March 4, 2015)

Ms. Johnson, the science teacher, also reviewed word meanings with her students prior to the WG activity. She projected the words and meanings on a white board and reviewed the meaning of each word. Like the math teachers, Ms. Johnson also noted that students were familiar with the meaning of the words. In addition, she reported that students' participation during the WG lesson was dependent on the difficulty of the reading passages and student interest in the lesson. More specifically, she found that student engagement and learning was related to the hands-on nature of the activities and the difficulty of the reading passages. She reported higher levels of engagement when students had the opportunity to participate in hands-on activities and when the related reading passages were shorter in length. For example, in her teaching log she reported, "Students enjoyed making buildings out of blocks and simulating an earthquake." She added, "The reading was a small enough chunk to keep students interested" (C. Johnson, teaching log, October 3, 2014). On the other hand, when Ms. Johnson evaluated the WG readings as longer and more challenging for her students, she noted a lower level of student engagement. As with Ms. Snyder, she voiced concern about the range of reading ability levels among the students.

Ms. Johnson also acknowledged that depending on the level of student engagement and interest, she would decide to shorten the lessons. Prior to the interview, I noted that the time Ms. Johnson spent on the WG lessons varied from 15 to 40 minutes. I asked her about this range in the interview. In addition to the difficulty level of the readings, she explained:

I think it also depended on how engaged students were with it. Sometimes – and you would think ten minutes would be like, “Oh, they were really engaged. We got through it fast.” But sometimes, it was like they were tapped out, and they weren’t interested, so we kind of flew through it. And I wouldn’t have been able to keep their attention for a discussion. Lots of times, when I’d pause for those discussion questions they had on the side, they were actually really interested and engaged, so our lesson would take a little bit longer. (C. Johnson, interview, February 24, 2015)

Like the math curriculum, the suggested completion time for each science lesson was 15-20 minutes.

4.5 RESEARCH QUESTION 2: HOW TEACHERS MADE SENSE OF THE INTERVENTION AND HOW THEIR SENSEMAKING SHAPED IMPLEMENTATION

Given that the WG intervention is interdisciplinary, understanding the perspectives of the math and science teachers was important. Thus, I conducted interviews with them as well as with Ms. Snyder. The interviews were key data sources. While the enacted curriculum could be observed, the sensemaking of the teachers was only accessible if they explained and described their thinking. The second research question focused on how teachers made sense of the intervention and how their sensemaking influenced the enactment of WG. In the following section, I report on the analysis of the interview transcripts.

I analyzed the interview transcripts using several iterations of coding (Strauss & Corbin, 1998). My efforts were focused on uncovering themes across transcripts that related to how the teachers viewed the intervention and their role in enacting it. Analysis of interview transcripts revealed five recurrent themes as described below.

4.5.1 Implementation as a dynamic process

When Ms. Snyder, the social studies teacher, discussed how she implemented the program, she suggested that she viewed implementation as a dynamic process rather than a lock-step procedure. The WG lesson could be followed, but with a caveat that adaptations would be necessary due to the complexity and dynamics of her classroom and school context. Her responses were supported by observations of her classroom practice. As I described previously, I observed a number of adaptations made to the program and later asked what influenced her decisions. She noted that the adaptations were influenced by her perceptions of students' ability, maturity level, her prior teaching experience with high school students, and typical contextual factors such as time constraints and student redirection.

Interestingly, she did not feel constrained by the program or by school administrators to adhere to the intervention plans or resources. It appeared to be an assumption of the school that implementation of any specific intervention was a dynamic process and was not expected to be implemented in its original form. The school district adopted a number of mandated programs and it was the expectation of district administrators that these programs would be followed by the principals and teachers in all buildings. Dunbar administrators worked hard over the years to negotiate their freedom to experiment with new approaches that they believed would support the teachers and students in their school rather than the mandated approaches used in other schools in the district. Therefore, it was an expectation that teachers would adjust the program based on how students responded to it. When Ms. Snyder reflected on the beginning weeks of implementation of WG she described the challenges and her reasoning for adjusting the plans for the readings. She explained:

I think it – my feeling on that is at first it was not successful. I think reflecting on it now when I look back that it was more the way we started it is we would just read the entire text all at once and then do the turn and talk and I felt like a lot of the students weren't quite comprehending the text we just read or fully understanding it. When it came to the turn and talk they were like I don't even know what to say right now, I didn't understand what we just did. And so, it caused a lot of behaviors to happen where students were like completely disengaged from it or they were talking about other things. And so, some students were doing it but the majority of students were not. (S. Snyder, interview, February 24, 2015)

In closing, she expressed additional changes that she would make to the program if she were to implement it again, describing the process as “trial and error.”

4.5.2 What works for our students

An assumption voiced by all teachers was that the teachers' judgments of their students' instructional needs would always supersede those of a program or curriculum brought in from outside the school. Dunbar teachers *know* Dunbar students better than any curriculum or program. It was clear that even district curriculum implemented in other schools in the same district were not binding. Ms. Snyder said, “In the past few years the focus has been less on, just in general, less on the following step-by-step the [district]curriculum that's provided and it's more about using it as a guide, but creating lessons that help the students succeed” (S. Snyder, interview, February 24, 2015). This appeared to be in line with the way she made sense of and implemented the WG program as well. The resources were to be used in ways in which her students responded to them. As discussed in the previous section, she created her own resources to support students' reading of the passages and argumentative writing. In addition, she created warm-up and exit activities to reinforce learning of the focus words. When asked about her thinking behind these changes, she said, “I'm just thinking of where my students are

academically and with their reading. And what can I have them do so they understand what we're doing, but also to push them a little bit more" (S. Snyder, interview, February 24, 2015).

The notion of the importance of implementing instruction based on their students' needs, rather than outside programs or curricula was not specific to Ms. Snyder. The math teachers expressed similar views when I asked about their math instruction. Mr. Henderson explained:

We're given a lot of freedom. We know as the math department down here, we know what our kids need to know and what grade level and we know when they're going to be assessed on it. The way that we work is we have to make sure that they're prepared in that manner. We're not following a laid-out map of, "Okay, next week we open up this book and work through this program." We're pretty informal about it, but somehow it works. (M. Henderson, interview, March 4, 2015)

Interestingly, building administrators appeared to instill this belief through their interactions with teachers. As I discussed in the previous section, administrators worked hard to have more autonomy on decisions related to how to best address the needs of their teachers and students. Therefore, teachers were not constrained to follow district guidelines related to a mandated curriculum. During a professional development session prior to the beginning of the school year, building administrators shared with teachers the growth students had made academically and the decrease in the number of suspensions during the previous school year. They attributed part of their success to moving away from the mandated district curriculum and programs, and adopting programs that met the needs of *their* students. There appeared to be a belief that positive change would occur when decisions were made internally by teachers and administrators who work with students on a daily basis. Teachers were reminded of this notion through the *Weekly Focus*, a newsletter emailed to the staff each week highlighting professional development meetings, different building initiatives, and meeting reminders. The following excerpt appeared in *The Weekly Focus* for nine consecutive weeks from the middle of September to November.

*Teachers do not teach content in the abstract; they teach it to students. In order to ensure student learning, therefore, teachers must not only know their content and its related pedagogy, but the students to whom they wish to teach that content (RISE 1b). **How well do you know your students?** (Dunbar Academy, school newsletter, September-November 2014)*

This illustrates the importance of teachers developing an understanding of students' social and emotional needs as well as their academic needs to plan effective instruction. Guided by this notion, building administrators portrayed the message to teachers that implementation was expected, but was to be done in a manner that best addressed the needs of their students. Teachers felt that building principals trusted their judgement and took a more "hands off" approach to implementation. For example, Mr. Henderson, one of the math teachers, described the role of building administration in the implementation process in the following way, "I think they had their hands on it, but they put us in charge of it and they trusted us to run it. They did checks on us. That's how they usually promote everything" (M. Henderson, interview, March 4, 2015). Mr. Marvin, also a math teacher, agreed. "It was expected that we would follow through with what was asked of us. It wasn't ruled with an iron fist like, 'This is how things are going to be.' It was suggested, expected and promoted as this will be beneficial for everybody" (D. Marvin, interview, March 4, 2015).

While Ms. Johnson and Ms. Snyder agreed with how the math teachers viewed the role of Dunbar administrators in the implementation of the program, it appeared that Ms. Johnson desired a more active role, being a new teacher. As she explained, "I'll be honest with you. We could do whatever and nobody would notice. So that is just very schoolwide, so it didn't matter if it was your program coming in, or say there was something new in the curriculum I was supposed to be doing, and we were really harping on, no one would notice if I did, or didn't because the administration's not in my room." She added that as a new teacher, "It's wonderful

that I have the freedom, but at the same time, it's terrifying" (C. Johnson, interview, February 24, 2015).

4.5.3 Curricular alignment

When teachers talked about the affordances and challenges of WG, they discussed the importance of lessons being aligned to what they were currently teaching or expected to teach for their specific content area or grade level. For Ms. Snyder, an important benefit of WG was not only its focus on geography, a required standard outlined in the district curriculum, but also its alignment with her teaching philosophy. She explained that the WG curriculum combined geography and history, providing students with a deeper context for understanding. Ms. Snyder also commented on the quality of the curriculum. She explained, "The sixth grade was fabulous. I really thought it was a well-done curriculum. High interest, definitely challenged the students, and it had enough variety that the students were never bored" (S. Snyder, interview, February 24, 2015).

4.5.4 Tension between teaching content vs vocabulary

In contrast, issues of misalignment were problematic for the math and science teachers. They noted that the WG lessons were rarely aligned with what they were currently teaching, causing a disruption in the flow of their lessons. This appeared to create a tension between a commitment to teaching their content and focusing on general academic vocabulary.

The way teachers talked about the challenges of implementing a cross-content vocabulary intervention suggest that their sensemaking was influenced by their commitment to teaching the

content of their specific discipline. Both the math and science teachers discussed how the WG lessons interrupted the flow of their instruction with a “random” math or science skill that did not relate to what they were currently teaching to their students. Both math teachers expressed concern that students did not have the prerequisite skills required to complete some of the WG activities. This was the case even when grade level expectations were that students should have mastered a particular math skill. Mr. Henderson said:

Even something as simple as plotting points on a coordinating grid was one of the lessons. Everybody in this building should know how to do that, but you had to reteach the idea. If it’s something in the WG lesson that we weren’t [teaching], it’s like you take a pause from reality for a minute, like, “Okay.” Not to down talk the program, but it did feel sometimes like an obligation, like, “Okay, we’re going to put everything on hold for a little bit. Let’s make sure everyone knows how to plot points on a coordinate grid. Okay, now let’s try to do this lesson that has these six words involved in it.” It wasn’t negative. I don’t mean to say it like a complaint. It was just – that was the reality of it. (M. Henderson, interview, March 4, 2015)

When discussing the interruption in the flow of her lesson, Ms. Johnson described it in the following way, “We finally got rolling. And then, it was like, oh, pause everything we’re just learning about, jump into a topic that is not even close to related to what we’re doing. And then, let’s jump back into what we learned on Wednesday” (C. Johnson, interview, February 24, 2015). In addition, Ms. Johnson expressed concern over the lack of rigor in the science tasks in WG, which were not in line with the expectations of the new science standards.

For Ms. Snyder, the social studies teacher, the tension between teaching both content and vocabulary did not relate to issues of misalignment, but the challenges of addressing the social studies content students were expected to know and the vocabulary in a 45-minute instructional period. During our debriefing sessions early on in the implementation process, she viewed content and vocabulary as two separate entities. She felt that the instructional time used to teach vocabulary took time away from teaching content. Her view that content and vocabulary were

unrelated created some tension in implementing the program. However, as she implemented the program she began to understand that by teaching vocabulary she was also teaching content to her students.

4.5.5 Impact on student learning

Despite the challenges of implementation, the teachers acknowledged the impact that the program had on student learning of general academic vocabulary. Ms. Johnson valued the attention to general academic vocabulary to support students' comprehension of content-area text, specifically in a climate of high-stakes testing and accountability. She explained:

I know my students are gonna have trouble with the vocabulary on their PSSA [PSSA is the name for the state assessment]. Regardless of the content I teach them, they're not going to do well because they don't understand the vocabulary. So, it's something I'm always striving. And I'm always looking for a solution, and I felt like it was a solution for me. (C. Johnson, interview, February 24, 2015)

Ms. Snyder witnessed the impact of the program on how students acquired and used the focus words as illustrated in the interview excerpt below:

Their improvement was substantial. I heard them using the words, they still use the words. They understand – they can use them in several different contexts. But they'll just pull those words out again, and they remember them. They know them. It's like part of their vocabulary, and it's great. So, I thought that [words used across classes] really helped with their vocabulary acquisition. (S. Snyder, interview, February 24, 2015)

The math teachers also discussed the benefits in having students encounter the same five to six words across classrooms. Mr. Henderson explained, "I think that it was extremely evident and beneficial to know that a few words, the weekly words were used – like I want to say on the floor across the classrooms." He went on, "To mention the words on a Wednesday and know they were familiar with them" (M. Henderson, interview, March 4, 2015). Mr. Marvin added, "And they knew them" (D. Marvin, interview, March 4, 2015).

All the teachers viewed the implementation as worthwhile because they saw an impact on student learning. This might have served as a motivation to move ahead with the program. When asked how they might change the program, they proposed to address vocabulary in ways that did not disrupt the flow of their instruction. Ms. Johnson, the science teacher, proposed the following plan for teaching the WG lesson:

I totally wouldn't mind taking the time for that on Fridays because we normally have our quiz. And then, so we've lost a little bit of instruction time. And I'd like to have a set time to dedicate to vocabulary, so – in a program that I am invested in and feel like it works – so that would be something I would really enjoy. (C. Johnson, interview, February 24, 2015)

Mr. Marvin and Mr. Henderson said that it would be difficult to design a program that aligned with what they were currently teaching, but they felt that revisiting the words each week through the review activity was a benefit in itself in supporting students' learning of vocabulary. Mr. Henderson explained that he enjoyed teaching the review activity because it fit his style of teaching. He said, "It's like you're leading a conversation or discussion. That was my favorite way of approaching it" (M. Henderson, interview, March 4, 2015). He also expressed that it reminded him of his experience as an elementary school teacher having the students repeat the words after him. Mr. Marvin suggested how the review could be enhanced through the use of picture cues. He referred to his experience using the *REV it up!* vocabulary program. He explained, "I just showed the picture and they said, 'Oh yeah, that's acute!' I said, 'Okay, make a sentence up' and they would say, 'The dog has an acute sense of smell.' So, they're doing stuff like that" (D. Marvin, interview, March 4, 2015). It was clear that teachers were thinking of how to incorporate general academic vocabulary instruction in ways that better accommodate the demands of their content, rather than simply disregarding instruction completely.

5.0 DISCUSSION

In this section, I discuss possible explanations and implications related to the findings for each research question. First, I provide possible reasons for students' vocabulary learning as demonstrated on the posttest and delayed posttest. Then, I consider issues related to the Word Generation approach and how that influenced teachers' sensemaking. Finally, I suggest how the use of sensemaking and practice-embedded education research (PEER) perspectives allowed me to understand teachers' decisions and how those decisions influenced implementation.

5.1 SUPPORT FOR STUDENT VOCABULARY LEARNING

While there are the obvious limitations to this study in terms of the sample size, there are research-based explanations for the positive student results on the vocabulary posttests and delayed posttests. Specifically, our hypothesis is that the vocabulary learning for the Dunbar students was mainly due to the multiple and varied encounters that students had with the words. Students encountered the words each day in social studies class and then met them again once a week in math and science classes. There is theoretical and empirical support for foregrounding the importance of multiple encounters in vocabulary learning (Coyne, McCoach, & Kapp, 2007; Stahl & Fairbanks, 1986). What is interesting about the multiple encounters, however, is that while the WG resources rely mainly on incidental encounters with the vocabulary through

reading and discussing texts and completing activities, the Dunbar teachers reviewed the words and their meanings in direct ways. The science teacher used the chart of words and their meanings that we had prepared in order to review the words before beginning the weekly activity. The math teachers reviewed the words and their meanings each week as well. The social studies teacher created warm-up and exit activities that focused students' attention on one or more vocabulary words and their meanings each day. These enhancements provided more than incidental exposure to the words.

The multiple encounters and the direct attention given to vocabulary were interesting developments given that the teachers who provided the instruction were not English language arts teachers.

5.2 MOVING VOCABULARY INTO THE CONTENT AREAS

The Word Generation resources used in this study anchored vocabulary instruction in social studies curriculum. That is an unusual choice for a literacy-focused intervention. Basically, the assumption seems to be that middle school social studies, math, and science teachers would be willing to devote part of their instructional time to activities specifically designed to support vocabulary learning. For the social studies teacher, those activities were primarily on day 1, when students were introduced to the words in the context of the Reader's Theater activity and then through the chart with definitions, word forms, and sentences. Those were the activities and resources that Ms. Snyder chose not to use. She did talk about the words and their meanings with students, but not in the way suggested in the WG teaching guide.

While all the teachers acknowledged their support for the goal of supporting students' vocabulary development, they also acknowledged a tension in doing so. That tension related to balancing the time it took to teach vocabulary with the time needed to teach content. The tension also related to how the vocabulary activities related to content.

For Ms. Snyder, the vocabulary was directly related to content, yet that was not readily apparent to her. In the beginning of implementation, she expressed concern about taking time to teach vocabulary because she felt that it was taking time away from teaching content. She did not view general academic vocabulary as supportive of the content she was currently teaching. Rather, she viewed teaching general academic vocabulary as an additional task. As she implemented the program, she began to understand that teaching the focus words was related to the content. She explained, "Sometimes I use the [focus] words when I talk about the [content] without even realizing it" (S. Snyder, debriefing meeting, November 18, 2014).

For the math and science teachers, as I discussed in the previous chapter, the tension was greater because of the content of the WG lessons for their subject areas was not aligned with the content they were teaching. The misalignment between the content that teachers were currently teaching and the WG activities disrupted the flow of teachers' instruction. To prepare students to complete a WG lesson, oftentimes the math teachers had to teach new skills or reteach skills that students may have not been exposed to for some time. When I interviewed the teachers, it was clear that they recognized the challenge of incorporating social studies content specific to ancient civilizations with math skills that were aligned with the curriculum. For example, to keep in line with the WG topic of ancient Egypt in social studies, the math lesson required students to calculate the area of pyramids. Finding area was not a skill students were learning at that time in their math class, yet it was related to the social studies content and the focus words for that week.

The science lessons posed similar challenges. For the activities to be related to the social studies content and incorporate the focus words, one of the science activities focused on a plague that occurred in Athens and the process of how contagions can spread. Although it addressed the English language arts standards related to science text, it was not aligned with the focus on earth and space science that Ms. Johnson was required to teach.

Time away from teaching content and issues of misalignment were especially critical in an environment of high-stakes testing and accountability. During the interviews both the math teachers and science teacher expressed the importance of preparing students for the state assessments and aligning their instruction to meet the rigor of the new standards.

The perspectives expressed by the Dunbar teachers have been discussed in previous research (Moje, 2008; O'Brien, Stewart, & Moje, 1995). Moje (2008) outlined some of the challenges of implementing content-area literacy instruction. She explained that teachers have strong beliefs about the instructional practices of their respective disciplines. Content area teachers might not feel that they have the skills necessary to implement literacy-related instruction, while others argue that their responsibility is to their content, not content that would be better addressed in an ELA classroom. In the case of the math and science teachers at Dunbar, not only were they asked to teach vocabulary, but also to teach it in the context of social studies. With competing time, pressures of accountability, and multiple initiatives taking place in the school, Dunbar teachers felt a need to "protect" their content (O'Brien, Stewart, & Moje, 1995). Although, teachers were cooperative and implemented the lessons, there was a concern that instruction in their content area was being compromised.

Since there are no published WG studies that describe the use of the new resources anchored in social studies and science curriculum, this study is the only indication available of how teachers are making sense of them.

5.3 WORD GENERATION AND SENSEMAKING

The sensemaking perspective is not often used to study teacher decision-making at a classroom level related to a specific intervention. Much of the prior research on sensemaking has focused on examining sensemaking in the context of policy work. Examining classroom implementation of WG through a sensemaking lens offered opportunities for understanding the multiple factors that influenced how teachers constructed meaning of the initiative and how their sensemaking shaped implementation. As such, this study provides an example of how it can be used and the kinds of results it can provide to inform work in program development and implementation.

Teachers' sensemaking of WG was influenced by a number of factors related to teachers' knowledge and experiences, policy, and the social context in which they worked. Ms. Snyder's sensemaking was highly influenced by her past knowledge and experiences as a high school social studies teacher. For example, Ms. Snyder's decision to adapt the WG resources to focus on chunking the text, the use of sentence frames and developing "purpose-style" questions were based on her past teaching experiences. It was an instructional approach that she felt had been successful with her eleventh-grade students. As I discussed previously, the math and science teachers' experience as content-area teachers also influenced how they made sense of the intervention.

Ms. Snyder's teaching philosophy influenced her sensemaking as well. She emphasized the importance of creating hands-on activities. She believed that through hands-on activities, students would be more engaged with the content. Her reasons behind adapting the readings was based on the importance of students engaging with the ideas in the text. She explained that when she had students read through long sections of the text and posed the turn-and-talk question, they became disengaged with the reading. Her belief was that by dividing the readings into shorter "chunks" and asking "purpose-style" questions throughout the readings resulted in higher student engagement. In addition, she believed that a more guided approach to comprehension was beneficial as well. This involved her directing students to highlight, underline, and write notes in the margins about important ideas in the readings. Many of the readings were completed in this way. Like Ms. Snyder, Ms. Johnson also placed importance on activities that promoted student engagement. Her perceptions of the level of student engagement during the WG lessons influenced her decision to extend or shorten an activity.

Factors related to policy, such as implementing Common Core State Standards, preparing students for high-stakes tests, and attending to multiple initiatives in the building also played a role. The math and science teachers mentioned the pressure of ensuring that they were addressing the standards so that students would perform well on state assessments. Building administrators also placed a strong emphasis on student performance. Administrators stated a number of times in professional development sessions as well as school newsletter reminders that an established goal for Dunbar was to become a "90/90/90 school." Such schools are characterized as having more than 90% of their students eligible for free and reduced lunch, more than 90% of students from ethnic minorities, and more than 90% of their students achieving academic success.

Another policy-related factor relates to the multiple initiatives implemented at the school to address students' academic, emotional, and behavioral needs. For the staff at Dunbar, these initiatives took precedence over meetings to discuss the implementation of WG. Based on observations of grade-level meetings, a consistent topic of discussion involved the school-wide behavior plan. Teachers discussed at length the behavior of each student as demonstrated in their individual classrooms. Students were awarded points throughout the week if they followed the established expectation of the school. A significant amount of time was spent discussing the points each student received and if their behavior was in line with these expectations. Based on this information, teachers placed students in one of three levels. Students who exhibited leadership skills were awarded the title of "Panther." In addition, time was dedicated to teachers' development of lesson plans, an established goal for the school year. Opportunities to discuss WG were not part of these meetings.

Attention to their students was a very important factor informing teachers' sensemaking. For Dunbar teachers, direct interactions with their students highly influenced their sensemaking. All teachers reported how students' reading ability influenced how the WG activities were adapted and implemented. As described previously, Ms. Snyder made significant adaptations to the reading and writing activities based on her concern for students not being able to complete these activities as presented in the WG plans. She expressed that many of her students were reading below grade level and these adaptations were necessary for them to be able to access the content. Interestingly, Ms. Snyder did not specifically comment on how student behavior compromised her instruction and influenced the adaptations she made to the program. It appeared that she believed if her students were on-task and focused, they were learning. Yet, the enacted curriculum in many cases lowered the cognitive load of tasks students were asked to

complete. For example, during the guided instruction of the WG readings, students simply copied what she wrote in the margins of the text. In addition, she reported a high level of student engagement when students cut and pasted facts about Pompeii. When students were engaged in copying, cutting and pasting, their off-task behavior was reduced. As a result, Ms. Snyder considered these adaptations useful and supportive of students' learning.

Dunbar teaches did not express a deficit perspective related to their students. They were realistic in appraising students' abilities related to reading. Like Ms. Snyder, the science and math teachers also reported the level of difficulty in the WG reading material. They often resorted to reading the materials to students and reported having to spend time explaining unfamiliar vocabulary. This vocabulary was in addition to the WG focus words for the week. However, for Ms. Snyder who had to deal with behavior issues, her solution was to plan activities that reduced off-task behavior. She worked very hard to structure her classroom and create activities to ensure that students were on-task. She had established procedures and routines, including having students begin working on an activity as soon as they entered the room and posting an agenda outlining the activities that students were to complete during the class period. In addition, she created additional activities to support the curriculum and student learning. For example, her decision to chunk the text into manageable segments for readers was a very useful move. However, literal questions related to short text segments lowered the cognitive demand placed on students. Rather than asking in-depth questions that encouraged class discussion requiring students to think more deeply about the readings, she was concerned that if the tasks were too difficult students would become disengaged and disruptive. This is an important issue for all teachers. How can students be supported in cognitively demanding tasks when behavior is a critical issue?

Teachers at Dunbar Academy made sense of the intervention through interactions not only with their students, but also the messages that they received from administrators. Although, teachers reported that administrators were not directly involved in the day-to-day implementation or visited their classrooms to ensure that they were implementing the program, administrators influenced teachers' sensemaking in more indirect ways. It appeared that administrators positioned teachers as experts in their content, as well as how to adapt instruction to meet the diverse needs of their students. The assumption inherent in the school was that programs would be implemented based on how students responded to them, even if this meant making significant adaptations to the program. Teachers reported having a considerable amount of freedom in what they taught and how they taught it. Therefore, this influenced their sensemaking of WG and the number of adaptations that they made to the program. These type of adjustments to curricula were commonplace at Dunbar and to be expected. This would not change for a program.

Although teachers' interactions with their students and messages from administration highly influenced teachers' sensemaking, opportunities to meet and discuss implementation as a grade-level team were not. As discussed earlier, meetings were planned for us to meet with teachers to discuss implementation, but other initiatives took precedence. Therefore, Dunbar teachers made sense of the intervention without the direct interactions with colleagues. Teachers reported that WG was not a topic of conversation even when they did have the opportunity to meet as a grade level. In addition, teachers also had little time to work with researchers to negotiate implementation. Although a professional development session was planned prior to the school year, the researchers were only able to provide a brief 15-minute overview of the program and implementation plan. There were no opportunities for planned debriefings each week or meetings with all teachers to address any questions or provide additional information about the

program to better support implementation. Thus, decisions teachers made were not informed by research, but their own judgement as the best way to implement the program.

5.4 PRACTICE-EMBEDDED EDUCATIONAL RESEARCH

Teacher sensemaking as a perspective is compatible to responding to Snow's call for practice-embedded educational research (PEER).

5.4.1 Partnership

To support the implementation of the program, we worked collaboratively with Ms. Snyder to support different aspects of the WG curriculum and to support other aspects of her instruction related to classroom management and organization. Since Ms. Snyder was new to teaching sixth grade, she not only had to learn new content related to that grade level and developmental differences between middle school students and high school students, but also how to adjust to teaching on her own. In addition to those changes, she was asked to implement a new program. As with many new teachers, this proved to be a challenging juggling act. As a researcher, it was important that I had opportunities to meet with Ms. Snyder inside and outside of her classroom to appreciate and understand the dynamic context of practice. Through observations in her classroom and conversations during debriefing meetings and the interview, I learned how she made sense of the intervention and observed for myself the various contextual factors that influenced her sensemaking.

5.4.2 Urgent problem of practice

The teachers and administrators at Dunbar Academy expressed concern about students' reading comprehension. Only 29 percent of students scored at or above the level of proficiency as measured by the state reading assessment. Due to the low test scores, focusing instruction on vocabulary across the content areas was an established goal for the school the year prior to this study. Despite the focus on lesson planning as the goal for school, administrators felt that it was important to continue to focus on vocabulary during the year of the study. During interviews, teachers acknowledged the importance of building students' vocabulary knowledge because they recognized that a limited vocabulary posed challenges to students for comprehending disciplinary texts.

5.4.3 Attention to innovation and implementation

From a PEER perspective, there is a shift from viewing the success of an intervention based on the fidelity of implementation to how variations of implementation can provide important information. According to Snow (2015), "Knowing what aspects of a new program or practice are easy or hard to implement, which ones are adopted after minimal versus only after intensive professional development, which are embraced by teachers, and which are rejected is crucial to designing new innovations that are likely to take" (p. 461). Therefore, the data that informed this study was how WG was implemented, not evaluating if and to what extent it was implemented with fidelity. Measures to determine fidelity of implementation often include infrequent observations and reporting based on checklists with the assumption implementation protocols are established and cannot be adjusted. To inform program development and implementation

research, it was critical to spend time in classrooms and talk with teachers about their instructional decisions. Ms. Snyder's decisions to implement some aspects of the program and exclude others were intentional. These decisions were influenced by how she made sense of the intervention. Insights into how teachers implemented the program could not have been captured by simply measuring the fidelity of implementation. We contend that this information is a valuable contribution to classroom-based implementation research.

Conducting research in authentic settings and providing a detailed description of implementation including the voices of teachers has an important place in the research literature. It only makes sense that the voices of teachers are valued and acknowledged to deepen our understanding of how teachers respond to implementation of initiatives.

APPENDIX A

OBSERVATION PROTOCOL

1. Provide a short description of the activity (IE: finding area of triangles)

2. Word Review
 - What time did the review of words begin and end?
 - What was involved in the review (ie: word cards, words/explanations displayed on white board)?
 - How was student participation?

3. Word Generation Activity
 - What time did the activity begin and end?
 - What happened during the activity?
 - Did the teacher read? Students?
 - Did students work with partners, independently, whole class?
 - Did students seem engaged? (How many working on the activity? Off-task?)
 - Was the reading level of the activity appropriate?

APPENDIX B

TEACHING LOG

Teacher: _____

Grade: _____

Date	How long did the lesson take?
What Word Generation pages did you use?	What was the reading level of the Word Generation resources? <ul style="list-style-type: none">• on-target• challenging
What went well in the lesson?	What did not go well in the lesson?
How would you rate student engagement in the lesson? 1 = low engagement 5 = high engagement <p style="text-align: center;">1 2 3 4 5</p>	

APPENDIX C

INTERVIEW PROTOCOL

General Interview Questions

Part 1: Experiences with the program as a teacher

1. How would you describe the day to day implementation of the program?
2. Describe your decisions to leave out or adapt some of the WG lessons.
3. Explain barriers to implementation.
4. Explain supports to implementation.
5. There were also materials that we included with the WG materials (show student packet). Can you talk about your decision to use or not use these materials?
6. Were there aspects of the program that were in line with your philosophy and/or style of teaching?
7. Were there aspects of the program that were not in line with your philosophy and/or style of teaching?

8. How would you describe the role of building administrators in the implementation of Word Generation?

Possible follow-up: Administrators support new program initiatives in various ways. Some monitor implementation very closely while others give teachers more freedom and flexibility. How would you characterize their role?

9. How do you see WG fitting in with other programs/initiatives and the goals of your school?

There are a number of programs and initiatives being implemented (ie: behavior programs, Plan/Teach/Assess/Reflect Cycle,RISE, how do you see this fitting in with the goals of the school?

10. How would you describe the role of content area teachers in the implementation of Word Generation?

11. Did your initial thoughts/feelings about the program change as you implemented it?

12. If you could make changes to the program what would they be and why?

13. Did you feel that your teaching changed as a result of implementing WG? How?

Part 2: Impact of the program on students learning

1. Overall, how effective was the Word Generation program in supporting your students' learning of academic vocabulary?

2. Overall, how effective was the Word Generation program in supporting your students' learning of content?

3. In what ways, could it have been more effective for your students' learning of academic vocabulary and/or content?

Possible follow-up: easier readings? different topics? different activities?

4. Would you implement the program again?

APPENDIX D

WORD GENERATION PRETEST

Grade 6: Target Vocabulary Pretest

Name: _____ Date: _____

School _____

Circle the choice that best completes each sentence.

1. If you **ostracize** someone, you
a. welcome them. b. join them. c. exclude them. d. include them.
2. In an **elite** group, members would probably be
a. few in number. b. elected by a popular vote. c. welcoming of everyone. d. ordinary.
3. An **oppressive** situation is
a. unfair. b. well organized. c. peaceful. d. unusual.
4. In an **ordered** situation, there is
a. chaos. b. organization. c. confusion. d. conflict.
5. A **proposal** is
a. a law. b. a fact. c. a suggestion. d. guideline.
6. If something is **stable** it is
a. changing. b. flexible. c. firm. d. movable.

7. A **justification** is a
a. reason for doing something. b. vote in favor of an idea. c. plan. d. protest.
8. A **conformist** is a person who
a. disagrees with others. b. does not have opinions. c. goes along with others.
d. helps others understand problems.
9. In a **hierarchy**,
a. some people have more power than others. b. all people have equal power.
c. there are no leaders. d. there are several leaders.
10. When farms produce a **surplus**,
a. there has often been a drought. b. there has often been a lack of fertilizer.
c. there has been a very good harvest. d. there has been a poor harvest.
11. If a source of information is **authoritative**, it
a. is understandable. b. is trustworthy. c. must be verified. d. is current.
12. If you **deduce** something, you
a. take a guess. b. form a generalization.
c. figure it out using clues and information. d. make a prediction.
13. A **methodical** approach is
a. difficult. b. simple. c. complex. d. careful and well planned.
14. A **legacy** is something that is
a. legal. b. illegal. c. remembered. d. costly.
15. To **descend** is to
a. climb. b. go downward. c. be unhappy. d. depend on others.
16. A **tactic** is a
a. military operation. b. carefully planned way to do something.
c. new way to achieve a goal. d. group decision.
17. If you are **compelled** to do something, you are
a. asked to do it. b. glad to do it. c. used to doing it. d. forced to do it.

18. If land is **fertile**, it

- a. is good for farming.
- b. has lakes for swimming and recreation.
- c. has a severe climate.
- d. is good for building cities.

19. If you **verify** something, you

- a. accept it as true.
- b. disqualify it.
- c. make sure it is acceptable.
- d. make sure it is true.

20. To **exempt** someone is to tell them that they are

- a. required to do something.
- b. requested to do something
- c. excused from doing something.
- d. expected to do something.

6. In an **elite** group, members would probably be
a. few in number. b. elected by a popular vote. c. welcoming of everyone. d.
ordinary.

7. To **exempt** someone is to tell them that they are

- a. required to do something.
- b. requested to do something
- c. excused from doing something.
- d. expected to do something.

8. If something is **stable** it is

- a. changing. b. flexible. c. firm. d. movable.

9. A **proposal** is

- a. a law. b. a fact. c. a suggestion. d. guideline.

10. To **descend** is to

- a. climb. b. go downward. c. be unhappy. d. depend on others.

11. If you **ostracize** someone, you

- a. welcome them. b. join them. c. exclude them. d. include them.

12. If you **verify** something, you

- a. accept it as true. b. disqualify it. c. make sure it is acceptable. d. make sure it is true

13. A **methodical** approach is

- a. difficult. b. simple. c. complex. d. careful and well planned.

14. If a source of information is **authoritative**, it

- a. is understandable. b. is trustworthy. c. must be verified. d. is current.

15. A **tactic** is a

- a. military operation. b. carefully planned way to do something.
- c. new way to achieve a goal. d. group decision.

16. A **conformist** is a person who

- a. disagrees with others. b. does not have opinions. c. goes along with others.
- d. helps others understand problems.

17. A **legacy** is something that is

- a. legal. b. illegal. c. remembered. d. costly.

18. If you are **compelled** to do something, you are
a. asked to do it. b. glad to do it. c. used to doing it. d. forced to do it.

19. If land is **fertile**, it
a. is good for farming. b. has lakes for swimming and recreation.
c. has a severe climate. d. is good for building cities.

20. A **justification** is a
a. reason for doing something. b. vote in favor of an idea. c. plan. d. protest.

APPENDIX F

WORD GENERATION DELAYED POSTTEST

Words! Words! Words!

Your Name: _____

Circle the letter of the best answer choice.

1. If you have to descend to a place, what might you say?
 - a. I wonder how high I'll need to climb.
 - b. At least I don't have to look down.
 - c. I can hardly wait to get there.
 - d. I hope it's not too far down.

2. What might an ostracized person say?
 - a. I feel like I belong!
 - b. I feel left out!
 - c. I feel like part of the team!
 - d. I feel like I have found new friends!

3. What might someone who is methodical say?
 - a. I like to shake things up.
 - b. I am very slow when I work.
 - c. I am very careful when I work.

- d. I don't like to work.
4. What might someone in a hierarchy say?
- a. There are people who have more power than I do and some that have less power than I do
 - b. We're all equal.
 - c. Everyone has the same job.
 - d. No one is sure where they stand.
5. If someone gave you a justification, what might you say?
- a. I don't believe you.
 - b. That's a good reason.
 - c. You tell an interesting story.
 - d. You deserve justice.
6. If someone gave you a legacy, what might you say?
- a. This will help me to remember you.
 - b. This is legal.
 - c. This is something that doesn't mean much to you.
 - d. You must have just bought this!
7. If a book is authoritative, what might you think?
- a. I'm not sure if I believe everything the author says.
 - b. I wish the author had given more references.
 - c. I can trust what this author wrote.
 - d. I will have to check on some facts in this book.
8. If you are compelled to do something, what might you say?
- a. I have no choice.
 - b. I will decide later.
 - c. I disagree.

- d. I agree.
9. If there is a surplus of vegetables, what might a farmer say?
- I wonder if I will have enough to sell.
 - That bad weather really hit us hard.
 - I doubt that I will make a profit this year.
 - I'm going to need more trucks to take the vegetables to market this year.
10. If the population in a city is stable, what does that mean?
- The number of people doesn't change much from year to year.
 - Many new people came a few years ago.
 - Many people left the city this year.
 - The number of people doesn't stay the same for very long.
11. What might a conformist say?
- I try to be different from other people.
 - I try not to meet other people.
 - I try to keep away from other people.
 - I try to be like other people.
12. What might you say if you had to verify something?
- I will make sure that it is interesting.
 - I will make sure that it is true.
 - I will make sure that it is short.
 - I will make sure that it is understandable.
13. Who might be described as elite?
- someone who is the same as most other people
 - someone who has about the same as most other people
 - someone who has less than most other people
 - someone who has a special talent unlike other people

14. What is another word for exempt?

- a. required
- b. excused
- c. exercised
- d. chosen

15. What is another word for tactic?

- a. idea
- b. theory
- c. secret
- d. plan

16. What is another word for proposal?

- a. vote
- b. decision
- c. suggestion
- d. preposition

17. What is another word for oppressive?

- a. ordinary
- b. unfair
- c. fair
- d. unusual

18. If something is ordered, what is it like?

- a. calm and peaceful
- b. chaotic
- c. hard to sort out
- d. disorganized

19. If something is fertile, what is it like?

- a. empty
- b. level
- c. feverish
- d. productive

20. If you deduce something, what do you do?

- a. solve a puzzle
- b. use information to figure out something
- c. take something away
- d. keep something secret

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