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Instructional Design: How Secondary Teachers Promote Student Comprehension of Informational Text

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**Instructional Design: How Secondary Teachers Promote Student Comprehension of
Informational Text**

By

Patti Lynn Strukel

This Dissertation is Submitted in Partial Fulfillment

of the Requirements for

the Educational Doctorate Degree

in Educational Leadership

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This dissertation has been examined and approved.

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Abstract

This study examined how secondary teachers supported their students' comprehension of informational text. Four content-area teachers – English, science, social studies, and vocational – were observed and interviewed in this study based on hermeneutic phenomenology methods. In addition, the teachers provided a sample of lessons delivered outside the observed processes. The findings exposed processes and actions that teachers intentionally engaged in to make informational text accessible to their students, create conditions that celebrated and supported the learning process, and that led students to valuable understandings when their students read informational text. The research also unveiled varied points of emphasis in terms of intentions, strategies, and outcomes across four distinct curricular areas in a secondary school setting.

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Writing a dissertation has been a rewarding experience. Even though numerous challenges arose during the process, I can honestly say that I never felt overwhelmed. Overcoming obstacles like identifying emergent themes simply felt like a necessary element. Being able to say that after two years of thinking, conducting research, scribbling on index cards, writing, and revising, is a credit to the people who have supported me through this journey.

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CHAPTER I

Introduction

Background of the Problem

Informational text, whether from a textbook, article, primary source, or other non-fiction source, comprises a major part of the course material that secondary teachers provide as a resource for their students. As the emphasis on specific content grows during these years of education, the resources and reading materials used to advance student understanding increase in technical language. From the upper elementary school years and beyond, “the focus shifts from learning to read to reading to learn” (Jitendra, Burgess, & Gajria, 2010, p. 135). In addition to grasping complex words, being literate in informational text requires that a reader can think critically about the relevance and accuracy of the material (Nokes, 2008). The facts, research, data, and process descriptions, found within such texts present stories for students, but these are not as naturally entertaining or accessible for students as fictional works are since the experiences conveyed in them tend to be less relatable (Berson & Berson, 2013). With these factors in mind, secondary teachers who aim to use informational, or expository, text in their courses for students to acquire information independently provide assistance through their instructional practices. At the secondary level, students encounter different kinds of informational text as varied as the courses themselves. Thus, content-area teachers intentionally design instruction to support student comprehension of informational text.

English, Science, and Social Studies teachers all present informational text to their students. Vocational classes are another common venue for lengthy informational texts, some of which reveal specific steps necessary in accomplishing a task. When a teacher anticipates or recognizes that barriers exist for students in understanding a text or a task related to it, he or she may provide support or adjust instruction through an academic intervention. An academic intervention may take the form of an individual conference or small-group instructional support that addresses a skill gap or misunderstanding. The timing of academic interventions varies as much as the subject areas in which informational texts are examined as part of the curriculum. These occur in the time before, during, and after, students participate in the reading itself. Academic interventions may serve a purpose related to context, student interest, activating prior knowledge, or other means of making the text more accessible.

With the Common Core State Standards at various stages of implementation throughout the country and a greater emphasis on college and career readiness, the learning activities require new literacies (Kist, 2013, p. 38). Students at the secondary level enter classes with predispositions related to the subject area as well as reading tasks. The typical pattern is that text complexity rises with reduced instructional support in the adolescent years when students are becoming “increasingly disengaged in school” (Moje, 2010, p. 50) and face more competition for their time and attention. What happens when teachers confront these challenges with purposeful anticipatory sets, text selections, and student products designed to engage the students in their reading? Instructional actions help elevate student comprehension of complex informational

text. Josh Thomases, New York City's deputy chief academic officer for instruction, has been focused on training teachers because of the informational text emphasis within the Common Core State Standards. In an interview conducted by Catherine Gewertz (2012), Thomases framed the challenge as, "Most teachers are not taught how to teach reading," (p.11) and discussed issues relating to text selection, training, and classroom structure, to support teachers in this matter. While every teacher may not have a license in reading instruction, each teacher needs to embrace the role of supporting students who are reading to acquire information or exercise skills in their courses.

In professional development efforts supporting implementation of the Common Core State Standards, close reading is one of the recommended instructional methods to support student comprehension of text. In close reading, multiple reads of the same text occurs, and the teacher guides students through the process of unwrapping the text. Fisher and Frey (2014) shared that they observed teachers organizing lessons on this around three questions: "What does the text say? How does the text work? What does the text mean?" (p. 279). Additionally, examining the contingency actions teachers use when students do not demonstrate understanding after the first layer of instruction sheds light on the type of engagement strategy that builds a student's stamina while facing a difficult task.

Depending on the content area, the approach to offering support to students that will assist in their ability to relate to the material presented will vary. As a teacher offers reading from the discipline area, particular skills are likely to be emphasized that enhance understanding in that discipline's work. Literacy scholars have proposed "that literacy

instruction be anchored in the disciplines and advocate explicit attention to discipline-specific cognitive strategies, language skills, literate practices, and habits of mind” (Fang & Coatoam, 2013, p. 628). Expectations guide students in their actions while engaging in disciplinary learning (p. 628). Student products will vary in their style, but a teacher guiding work within a particular subject area will offer steps toward student effectiveness at advanced levels of study in that discipline area.

In every content area, comprehending informational text demands more than simply knowing what the words mean. Through deliberate instruction, teachers are instrumental in supporting students when they read informational text. Helping students realize that a textbook is not simply an unquestionable authority on a subject is one of the principles that must be intentionally taught. Textbook sources tend to mask bias since their style feigns the combination of authority and anonymity; thus, the student may not evaluate the source as a product of its author (Fox, 2009, p. 204). While a student may be trained to identify the source as well as any context factors relating to that person in a primary document or periodical, the student may be less inclined to apply that critical skill to a textbook task.

Additionally, building meaning from informational text is a shared responsibility between teachers and students. A teacher cannot simply assign work with a text and expect that the quality of learning will be strong; however, diminishing the value of assigned reading by supplanting its outcomes with instruction is problematic as well. Traditionally, a scenario representing this is for history teachers to assign reading and then offer a subsequent interpretation of that reading that further reduces the likelihood of

students reading future assignments (Nokes, 2008, p. 36). If a teacher follows this sort of a pattern, predictably a student will find less value in spending time on such tasks. With attention to more refined literacy instruction, history teachers would be wise to include strategic instruction, select shorter text segments, check for understanding, allow for student interaction about the text, and encourage use of the textbook as a content resource (p. 37). Neglecting the responsibility of designing activities that are a conduit between student motivation, ability levels, and interest, can have a detrimental impact on the way that students complete and comprehend material. Conversely, aligning reading tasks with student interest and ability not only extends the informational text to students, but it also empowers them to retrieve content more independently.

As students sense that they are capable of acquiring information and that the information is worth acquiring, it opens up more opportunities for teachers to engage their learners. Instead of being limited by what one textbook communicates, providing more informational text in classes increases the relevance of the course material and supports differentiation, especially related to student interests. Fang (2014) suggested that it is important to recognize the relationship between literacy and content, “Instead of seeing language/literacy merely in a supportive role serving content learning, we should consider the two as not only central to but also equal partners in disciplinary learning and socialization because they are inextricably intertwined in the development of modern disciplines” (pp. 447-448). The language and literacy actually extend the content to students when they are used effectively. When exposed to an article about medical research edging closer toward a breakthrough cure that requires a student to apply

understanding acquired through the course content, the value of the course in that student's eyes grows. As a history student reads about an artifact that leads experts to question previously held beliefs about a past civilization that references contextual knowledge built within the classroom, the merits of the daily knowledge climb. Without being able to access the originally-authored texts themselves, hereafter referred to as *authentic texts*, students are relegated to the roles of passive learners as someone relays the news of such stories to them (Wineburg, 2010). Authentic texts appear in a genuine form, just as students would find them in daily activities or while researching primary sources of a past event. While these specialized texts offer more direct insight about an event or circumstance, they are also likely to be more difficult as students initially encounter them (VanSledright, 2004). When the skills and supporting knowledge have buoyed a student to a level of actively understanding one authentic text, it does not take much imagination for the student to consider that this can happen again. It is through these activities that students see themselves as independent learners who can construct meaning and draw from contextual factors (Wineburg, 2010). Without exposing students to authentic texts like these, teachers risk unintentionally conveying that learning only happens in the classroom environment under the watchful eye of a teacher. Offering avenues to external circumstances with authentic texts opens students' eyes to the numerous opportunities in which learning will present itself through reading.

When students pursue learning opportunities through reading, their personal investment in the content and its application grows. While some secondary students will engage in this kind of independent learning without prompting, it is likely that this kind

of academic pursuit will first occur under teacher guidance so that comprehension occurs beyond face value (Wineburg, 2010). Teachers can provoke higher-order thinking in students through meaningful class activities. One means of getting students to enlist in such acts of depth is to provide them with authentic reading. As attention on measurements of text difficulty has grown with the availability of Lexile scoring tools (a number indicating the difficulty level of a text), the spotlight has also been cast on student reading scores (Lai, Wilson, McNaughton, & Hsiao, 2014). Providing interventions may help struggling readers manage more difficult text. If instructional strategies are executed well, they can act as scaffolds for readers and might even be generalizable across content areas. Other ways to make text more accessible for struggling readers include providing support with questioning strategies or allowing students to select a text that connects better with their background knowledge (Moje, 2010). Sometimes options for differentiation are not available because of the specificity of the topic of text being examined.

In one study conducted with seventh-graders, Concept-Oriented Reading Instructions (CORI) is compared with traditional methods to gauge their impact on student comprehension. The study's findings presented "that multiple motivational-engagement supports combined with strategy instruction for informational text increased achievement in an educationally significant classroom unit for middle school students" (Guthrie, 2014, p. 405). Other patterns detected in this study related to a student's interest level toward a particular topic, collaborative opportunities, and the impact of autonomy (Guthrie, 2014). It stands to reason that, even in terms of a student's leisure

reading, one is able to read a higher-level text in an area that is of greater interest. Factors influencing this would include not only the student's drive to read the passage or article, but also the background knowledge that acts as a compass in an informational text. As teachers design activities for a wide range of student abilities, building the background knowledge for all students as a means of supporting their understanding of the piece is paramount. As Kist (2013) stated, integral to the quality of class activities surrounding nonfiction text is "a teacher who has a deep understanding of what the new forms of reading and writing entail" (pp. 42-43). Making observations about text structure and helping students determine the purpose of an author's words are a means of modeling effective practices to readers.

At the other end of the student spectrum within a secondary environment are Advanced Placement students. Nokes (2008) shared research conducted by Young and Leinhardt in 1998 revealing that, "gifted high school students wrote more sophisticated analyses of historical documents after they had been given feedback on each of four different document-based essays that they wrote over the school year" (p. 40). Instructional methods that make difficult primary sources more accessible to students include strategies like layering, sourcing, and document corroboration (p. 41). While the complex texts written in historical voices present a steep challenge to students who are accustomed to more contemporary wording and reporting of issues through a secondary source, the idea of seeing an event through the perspective of a stakeholder creates a human element and generates more critical thinking for the engaged reader. Students of the modern world who have matured in the 24-hour news cycle and viewed social media

reactions to events may be better equipped to factor perspective into historical inquiry than their counterparts fifty years ago.

Problem Statement

Providing opportunities for students to apply expository reading skills in an educational environment while also building their ability to interpret more complex texts in the meantime is invaluable and casts the mold for a more discerning citizenry. Yet, meeting these demands can be daunting for teachers, especially at the secondary level, who introduce and use this type of text regularly. The aforementioned primary studies and others that have revealed effective strategies are too few in number. Too often teachers' successful strategies remain unknown beyond their classrooms or immediate professional circles. Additional research that identifies ways that secondary teachers are successfully increasing comprehension of informational texts would not only be beneficial to the teaching masses, but critical for building an information-literate society.

At this time, there is a lack of intensive studies about these instructional practices, observational reports of classrooms in which they are enacted, and teacher reflection about their effectiveness. Literacy experts propose multiple solutions to enriching the reading experiences of students. Collegiate and professional environments expect our students to be equipped to handle texts they disseminate. Secondary teachers have a vested interest in student success, and thus want to provide tools with ways to advance their comprehension of complex texts. Their students may encounter obstacles in understanding informational texts as well; thus, academic interventions may also be included in the considerations of secondary teachers. As secondary teachers seek to

address comprehension issues while exposing students to more authentic text material, they will benefit from the findings of this study that will provide a qualitative analysis of effectively extending instruction to students.

Purpose of the Research

The purpose of this research was to examine successful instructional design strategies used by secondary teachers to increase comprehension of informational text. This study investigated the experiences of teachers in four content areas – English, Science, Vocational, and Social Studies – to learn about their practices as facilitators of both content and literacy knowledge.

Research Questions

The primary research question was: How do secondary teachers design instruction to promote student comprehension of informational text? Secondary questions that arise in conjunction with this are: How do activities conducted before, during, or after, the reading of informational text vary in their effectiveness? Which strategies do teachers find most effective at promoting student comprehension? How are instructional strategies promoting reading comprehension employed across a variety of curricular areas? What are some of the ways that teachers cultivate a classroom environment that invites students to experience informational text both as an individual and as part of a classroom community?

Significance of the Research

This study spotlighted instructional practices that advance understanding of informational text. Unlike resources that provide specific tools without regard for

specific content areas or those designed to address the needs of particular populations of students, the insights gained from this study provide an overview of content-area reading instruction to inform secondary school administrators and classroom teachers because of its actions comparing instructional design strategies across a range of content areas. By identifying themes present in instructional design, this study may benefit teachers seeking to implement intentional actions that help their students acquire content from informational text.

Delimitations

This study was limited to secondary teachers at one high school in south-central Minnesota. In order to conduct this research, a degree of familiarity with the researcher and instructional practices to promote understanding of informational text was sought. In order for participants to be comfortable sharing their instructional practices, reflecting on their instructional design, and evaluating their student performance, with me, a level of trust was necessary.

Definition of Key Terms

Academic intervention. In this study, an instructional strategy that a teacher uses as a means to promote student comprehension of a text before, during, or after, the actual reading process.

Academic language. For the purposes of this study, academic language is presented as words that are used in a classroom environment as students experience their academic work. This is more demanding than everyday language that students encounter, but more broad to school experiences than content-specific vocabulary.

Informational, authentic, or expository text. In this study, these terms are defined as non-fiction text that communicates information germane to a particular content area.

Instructional design. For the purposes of this study, this is the intentional way that a teacher plans a lesson meant to convey skills or material, relating to literacy or content, to students.

Instructional practices. Throughout this research, these are actions taken by a teacher to help students acquire understanding relating to literacy or content.

Literacy. The ability of a student to read, write, and understand language of a particular text, is how this study defines this term.

Vocabulary. For the purposes of this study, vocabulary refers to terms that have a specific meaning in the context of a reading or content-area activity. This is more demanding than everyday language that students encounter, but not as broad as academic language that may be used in multiple content areas.

CHAPTER II

Review of the Literature

When a student encounters informational text in a secondary school setting, an array of factors may disrupt the process of learning from this type of material. In this context, a content-area teacher, likely to be a content expert, is guiding the adolescent learner who has a set of predispositions about learning, a sense of how enjoyable and helpful past learning experiences have been, and an awareness of past abilities to meet academic challenges. Besides what these individuals offer to the classroom, the expository text in numerous secondary classes that is partially used to convey subject matter features complex vocabulary and other elements that inhibit the ability of a student to build meaning from – or even understand – it.

In this review of literature relating to content-area reading experiences in the secondary classroom, the topics explored will include the following: How the constructivist approach drives analysis in this field, the role of student comprehension, the timing of instructional strategies, text types pertaining to various content areas, teacher perceptions about addressing literacy issues in content-area classes, and the role of engagement as it pertains to adolescent learners. Sources reviewed included ideas that various researchers offered on the basis of studies they conducted. While American studies were prioritized for this process, a few foreign studies were included when literacy was the fundamental component of the research rather than elements inherent to a nation's specific conditions.

Constructivism

Constructivism stresses that a learner builds meaning as part of the process of acquiring knowledge. In terms of literacy development, both learners and literacy experts work together to construct meaning from text provided in a classroom (Lai, Wilson, McNaughton, & Hsiao, 2014). Teachers are not removed from this interaction or process because of their roles in providing opportunities for students to interact with meaningful text.

The perspective that readers actively build meaning from the text lends itself to literacy studies. In addition, this perspective lends itself to examining teacher practices in guiding student actions. Personal engagement with the text is a prerequisite of a reader in this approach (Spires & Donley, 1998). Rejecting this would make the student a passive consumer (Nokes, 2011), which would absolve all parties in the classroom from their roles in improving comprehension. A further implication of this would be accepting reading ability as static rather than dynamic. Embracing constructivism allows for a view that teacher-led actions can guide a student to become more successful as a reader.

Student Role

Reading materials extend content to students in the context of classes. With science, and social studies, content literacy empowers a student to acquire information beyond that which a teacher verbally communicates. Advancing understanding opens doors for exploration into each of these fields beyond the core content that comprises the course. Constructing and co-constructing knowledge enables students to consider multiple perspectives and interact with text through discussion, reading, and writing

(Fisher & Ivey, 2005). Fewer limits exist in an environment such as this, not only in terms of means of extending information, but also in terms of the products students create. More opportunities for authentic interaction with ideas germane to a content area exist when this is the pervasive perspective of literacy. Viewing literacy development as an idea that learners and literacy experts foster through their actions augments the importance of actions both parties take (Lai et al., 2014). Traditionally, students have been trained to yield to the authority of the text and teacher; thus, teacher guidance fosters students to construct meaning from text (Nokes, 2011).

Teacher Role

Teachers determine the objective of instruction as a starting point when designing lessons and selecting strategies in order to instruct their students. When selecting strategies, methods, and techniques supporting literacy, teachers consider comprehension as an initial goal for students because it is necessary in order to advance thinking (Peleaux & Endacott, 2013). While comprehension is a concern with each text that is provided to students, this base-level expectation invites broader means of instruction. Textbooks are one such resource used to disseminate information, but alternative texts can be used to teach content as well (Fisher & Ivey, 2005). Since students are accustomed to single texts, it is necessary for teachers to model how to use multiple texts to advance big ideas rather than limiting students to a single common text (Fisher & Ivey, 2005). An added advantage of this practice is that it lends itself to differentiation, or providing texts at various difficulty levels within a classroom. Giving students

opportunities to be more nimble in their use of a variety of texts communicates a confidence in their abilities to learn beyond the classroom as well.

As part of classroom practices, teachers can help students see themselves within the content area. Literacy strategies have the potential of connecting prior knowledge, past experiences, and current events (Fisher & Ivey, 2005). Helping students to construct this web of understanding provides a meaningful context in which the words being read can be embedded. In order for students to establish a base of information about a topic, they need to be able to be literate in it. The ability to read and write about a topic expands the limits of student understanding because these are among the fundamental means of acquiring and sharing knowledge. In emphasizing the priority for these skills, Fisher and Ivey stated that they are “foundational to thinking” (p. 6) and “critical to learning” (p. 7). While other means of communicating exist, the transmission of ideas relies on a conduit of reading and writing.

Comprehension

While the intention is for students to be able to read independently, variables related to student ability and text difficulty can impede this process. In terms of students’ ability to decode and understand, informational text is typically more elusive. In a study of 310 students in grades 7, 9, and 11, Denton, et al. (2015) examined student comprehension of informational text. In plotting their findings, the team reported that students who were determined to be poor at reading comprehension struggled even more with informational text than with narrative text (p. 405). Likewise, students who were considered to be adequate in their reading comprehension were more effective at

narrative than informational text. As teachers guide readers in understanding informational text, the relative difficulty of it compared with other materials students read needs to be acknowledged. This research also indicated that constructing meaning from informational text by generating inferences is likely to be elusive to adolescent readers. The role of the teacher as one who can guide students in their approach to readings of this nature, both in terms of students engaging in self-monitoring practices and repair strategies, cannot be overstated based on this study. In addition, these researchers stated that teachers must offer both literary and informational texts to students frequently so that they can learn from the processes they apply as well as the texts themselves (p. 411). Young students also find narrative text to be more accessible than informational text (Marinak & Gambrell, 2009).

Besides student performance, other tools are used to determine text complexity. The difficulty level at which a text is written is measured with a Lexile score. With this rating, researchers are able to draw conclusions about the compatibility of a text and a reader. Advanced vocabulary, text structure, and amount of background knowledge required to understand concepts are all examples of complexities that may be present and increase the Lexile level of a passage.

Vocabulary Issues

Informational text includes academic, as well as discipline-specific, vocabulary in order to convey meaning. A student may be prevented from understanding a text based on the use of these words. Writers will use appositive phrases, words to define a term embedded within commas, as one way of scaffolding meaning (Conderman & Hedin,

2010). Location of advanced vocabulary explanation at the beginning of a sentence rather than at the end of it can also impact text accessibility. When students with disabilities or English-language learners read passages that include figurative and technical meanings, vocabulary issues are likely to make that text's meaning obscure to them (Wexler, Reed, Mitchell, Doyle, & Clancy, 2015). Teaching academic language and literal meanings improves students' content area knowledge (Spies, 2016). Even if a student is able to make incremental progress in acquiring necessary vocabulary to unlock the meaning of a passage's words, it may not be enough to make larger comprehension gains. Students who are frequently researching the meaning of words are likely to slide in overall comprehension because working memory demands will compound their vocabulary issues (Denton et al., 2015). Passages with advanced vocabulary become a series of disconnected obstacles to students with this deficiency.

Structure Issues

Besides surface features that a reader uses to construct meaning, deep features of language also shape a text (Lai et al., 2014). Numerous processes relating to word use and other subtleties that provide opportunities to make connections and build inferences can lead to multiple interpretations of text. While text structure can help a student understand narrative text, the nature of informational text as a tool for guiding a reader through an argument or process amplifies the need to help students diagnose how a text is built. Direct instruction about the elements and structure operating within informational text benefits students (Marinak & Gambrell, 2009). This type of instruction provides students with an advantage on subsequent readings as well (Spies, 2016). Thus, it can be

inferred that identifying the impact of structure on the meaning of a text is a trainable skill associated with informational text.

Need for Background Knowledge

Activating a student's background knowledge provides context for a reading. One consideration with this process relates to efficiency. Opening a conversation with students about what they already know about a topic is one way that teachers introduce a text topic. However, providing explicit background knowledge that relates to the informational text is more efficient (Wexler, et al., 2015). This type of teacher-directed pre-reading activity helps link students' existing knowledge to the text being encountered (Spires & Donley, 1998). In the next section of this review, instructional strategies used by teachers before, during, and after the reading process will be explored.

Instructional Strategies

Teachers have an opportunity to support students' reading informational text through deliberate tasks. Providing these tasks before, during, and after the reading process allows teachers to shape student interaction with the content. In reflecting on the idea of constructivism, instructional strategies steer students toward reaching conclusions that align with teacher objectives while also allowing students to personalize their suppositions from the reading. The work that accompanies reading may funnel a student toward particular outcomes or it may actually broaden how a student implements the ideas shared in the reading. It is likely that all readers need instruction to support their efforts in devising inferences (Denton, et al., 2015). The ability merely to decode reading is not sufficient in promoting understanding or building depth toward a subject (Gulla,

2012). In assigning a task like this, a teacher still needs to be cognizant about the difficulty level of the text. If the reading is too difficult, a student may not be able to learn from it or reflect on its meaning (Fisher & Ivey, 2005). Academic interventions may be necessary if a teacher perceives that students are not understanding either the text being read or the task assigned.

Before Reading

Anticipating the obstacles that a class or portion of a class may encounter is one type of pre-reading strategy teachers might use. One means of support is for a teacher to preview a text for words, phrases, or structures that might inhibit student understanding (Conderman & Hedin, 2010). Additional support may include assisting students with how a passage is organized. While connecting a text with student experiences is helpful prior to reading, research by Manarin (2012) offered that linking a text to familiar readings or content knowledge is a more advanced practice that would help students. This action supports synthesis of the material, which is a higher-order thinking skill than just comprehending what the words say. Establishing the purpose in reading a text as well as helping students to generate a prediction about the content of the text also support students as they prepare to read a text (Vacca, 2002). Generally speaking, pre-reading strategies help extend text to students so that they feel more comfortable in unpacking its meaning. Additional details about strategies used before reading will be examined in the student engagement portion of this literature review.

During Reading

Instructional strategies that are prescribed during reading give students tools that allow them to ascertain the meaning of informational text. In some cases, a teacher may want students to complete a graphic organizer that tracks information conveyed (Conderman & Hedin, 2010). Other methods relate to sorting informational text by its elements (Marinak & Gambrel, 2009). By identifying the author's purpose, key ideas, supporting and clarifying information, visual aids, and vocabulary, a reader is able to represent the message conveyed by the informational text. While an experienced reader may complete a task like this automatically, adolescent readers are likely to need a recommended means of recording these details.

Teachers who provide tasks to readers while they process material may also need to consider the size of the passage. Struggling readers' issues are amplified when they are expected to read a sizable passage (Fisher & Ivey, 2005). While stamina is a factor in physical skills, it is sometimes neglected as a factor in cognitive skills. In a study conducted by Gulla (2012), extending the amount of time on which a student remained focused on a reading task was correlated with reading success. Lengthening the increments of time dedicated to comprehending text helped reading emerge as a skill rather than just an action.

The learning that occurs during reading ensures that the student is indeed acquiring an understanding of the message. Strategies applied in this phase invite students to monitor their understanding and track the author's message (Vacca, 2002). One of the characteristics defining successful readers is being able to be inquisitive about

an author's message as they actively read a text. In the segment of this literature review that examines different text types in the content areas, some additional strategies employed during the reading process will be described.

After Reading

Instructional strategies that are part of student work after reading may require a teacher to consider the degree to which students have understood the text after an initial reading. The complexity of informational text may require a reader to reread a passage or solve problems related to what was conveyed prior to doing more advanced work with the text (Conderman & Hedin, 2010). Adolescent readers are not likely to engage in either of these processes without instructional guidance suggesting these actions or time provided to complete them. Teachers must be sensitive to the length of passages selected and know that it is not realistic to assign voluminous readings without sacrificing the amount of student interaction that occurs with the text.

Comprehension strategies applied in this phase of the reading process can help a reader delineate how the ideas apply to the subject area being studied (Vacca, 2002). Allowing students to elaborate and interpret at this point helps them to articulate the author's message. Peer conversations, class discussion, and writing activities are all candidates for post-reading reflection and extension.

Another means of helping students understand text is by assigning an authentic task, one which requires a student to implement the text's message in a way that a professional, content expert, or concerned citizen would. This act of building relevance requires that students expand their content knowledge and their interest in reading and

writing (Fisher & Ivey, 2005). Capturing the interest and best skill application for students at a range of ability levels occurs when this kind of task allows for student choice or another means of differentiation.

A lower-level instructional goal is for students to be able to recall what a text said. With a similar amount of time devoted to an instructional task, a teacher can promote more advanced thinking. When writing-to-learn strategies are employed, students are likely to work beyond the level of basic recollection (Vacca, 2002). Writing as a means of supporting student comprehension of reading will be examined in a later portion of this literature review. The next aspect of research to be revealed is how text types vary by subject area.

Text Types in Different Content Areas

Depending on the subject area, students will face different types of texts as well as varying expectations about how to use the text. A skilled reader approaches informational text differently whether its style is argumentative, explanatory, or narrative. Procedural writing like that found to describe an experiment is more prevalent in science, and social studies may require that a student can interpret the meaning of a political cartoon (Spies, 2016). While these two text types are at opposite ends of a literacy spectrum, especially in terms of the number of words used to convey meaning, secondary students encounter these and many other styles of writing in their coursework. Limitations arise when pedagogies guide literacy instruction as though its strategies always meet the needs of all disciplines (VanSledright, 2004). Evidence suggests that much research conducted relating to literacy skills has been done in silos – presenting

topics as separate and independent of each other. At the secondary level, the priority of work shifts into particular disciplinary areas. In addition, the teachers have greater degrees of specialization relating to course content. Arming teachers with awareness related to their discipline's texts is a logical means of improving student performance. While a teacher may read a particular text easily, that ability does not naturally transfer to students without teachers being aware of students' needs. Zwiers (2008) stated that teachers have a tendency to struggle in recognizing specialized content language, as characterized by the figurative statement that this process is like a "fish trying to describe water" (p. 23). In spite of this potential weakness, which can be countered through awareness and interactions with students, teachers play an important role beyond instructional strategist as well. Teachers help students build their perceived levels of competence in a range of texts by providing them work that is at their reading level, offering feedback on understanding, recognizing how reading shapes student knowledge, and steering students toward realistic goals (Nokes, 2011). Thus, text selection is another process in which a teacher engages. No matter what the content area, the overall intent of reading in secondary content-area classes is to help students build knowledge from text. In experiencing this, students become learners beyond the course and eventually, this extends into workplace and citizenry. The yields of perfecting these skills are immeasurable in value and years.

Readers of this literature review will notice a greater amount of information related to the content area of social studies. Twenty years of teaching experience has exposed this researcher to the field of social studies and specialists who have dedicated a

tremendous amount of research to the specific demands of history, in particular. Access to the resources focused on this field has been plentiful, so I did not want to neglect the depth and breadth of that understanding. It is not meant to diminish the special characteristics related to the other content areas, but it acknowledges nuances that a person who has been entrenched in this field has experienced.

English

One might dismiss English as a content area without a connection to a study about informational text. However, in addition to fictional texts commonly associated with literature classes, English classes examine nonfiction, or informational, texts as well. Complex sentence structure combines with unique vocabulary and syntax as earmarks of this type of reading (Denton et al., 2015). Instruction that supports acquisition of meaning from figurative language is likely to span both types of texts encountered in English (Lai et al., 2014). Traditionally, with reading comprising a significant segment of secondary English classes, this has been seen as a venue for adolescent reading growth. In recent years, calling on all disciplines to be executors of literacy strategies has become one way of seeking to promote reading comprehension. Sharing this responsibility beyond the English class allows for the likelihood that all students gain an appreciation for the value of reading as well as skills specific to the wide range of subject and career areas not directly associated with English as a content area.

With so much of the reading in English courses having been in the range of fiction traditionally, the use of informational text in these courses may present an adjustment for teachers as much as students in this subject area. Persuasion is one of the

styles of informational text present in English classes. In a passage that employs persuasion, the reasoning presented is used to convince a reader that this line of thinking is more logical than the opposing side's reasoning (Zwiers, 2008). The role of the reader is one of needing to measure logic and weigh evidence. These courses typically address persuasive elements in writing and speaking as well.

As readers in an English class study events, culture, and other contextual influences that relate to either fictional or informational texts, they may also encounter cause-and-effect thinking. Class discussions may require students to show that they can recognize or speculate on the influences that led an author to write a story or novel. Identifying the relationships between these background strands of information and another text may help a student see the origins of an author's ideas (Zwiers, 2008). Even though fictional work has a greater presence in English than in science, social studies, or vocational courses, it is not the only kind of text that students in English courses read.

Science

Informational text in a science class might be in the form of a news article, research reports, or the textbook itself. Science texts present readers with difficulties related to specific terminology, unique concepts that are sometimes counterintuitive to a novice, and examples that are specific as means of illustrating the particular concepts (D'Alessandro, Sorenson, Homoelle, & Hodun, 2014). Applying a particular reading strategy may be difficult in this arena because of how time-intensive such practices would be given the technical aspect of the text. Zwiers stated that the technical language in science occurs in describing how events in the natural and physical worlds occur (as

cited in Martin, 1991). Graphic organizers, text visuals, and mathematics also dominate science texts and place demands on literacy skills that do not get exercised as much in other subject areas (Zwiers, 2008). Additionally, science textbooks examined by researchers like Johnson and Zabrocky (2011) are characterized as lacking cohesiveness, being too demanding, and assuming that readers are more equipped with background knowledge than they actually are. If textbooks fit these traits, practical strategies must be provided. A flaw is that some of the strategies designed to guide reading do not fit science textbooks well.

Research suggests that instructional strategies in science literacy differ greatly from those in other fields because of the unique challenges present in these texts. Stories and narratives are almost entirely absent from these texts, which instead offer a structure that is “dense and hierarchical” (Zwiers, 2008, p. 85). Further analysis of scientific text has identified other complexities as well. Procedural language is common and used to direct specific actions of students in lab activities or reflect on what occurred in a lab setting. Concepts appear in the form of text, but they may also be abstract and communicated by various media. Thus, a student’s ability to be literate in the words of a science text does not guarantee success in navigating the entire text. Other subject areas frequently report in the past tense, but science texts will use present-tense verbs to describe a phenomenon that is present in the natural world or elaborate on how and why something occurs. While the objective style of reporting information in a science text does not expose its readers to as many variations in terms of intent or interpretation, this also means that emotion and first-person perspective are lacking. Similarly, passive

voice construction tends to require more words and a different syntax from styles of reading that are more familiar to secondary students. The distinction between academic language and content-specific vocabulary is blurry in science texts as well because of the nominalizations of words that may have familiar word roots.

Science is a dynamic field because of influences offered by new research and ideas as communicated through descriptions of Scientific Inquiry, or experiments. “Students must be apprenticed into ways of using the language of observing, questioning, hypothesizing, experimenting, interpreting data, and making conclusions” (Zwiers, 2008, p. 86). Examples of Scientific Inquiry may be present in textbooks, but they might also become a supplement to provide students with updated research or a more intriguing example than a textbook provides. After coaching students through the terminology in the Scientific Inquiry process, a teacher may model his or her thinking and questions about a study to help students become more adept at analyzing and eventually writing such reports. A lab may ask students to interpret results and describe these in a report. By practicing this type of communication, students become more skilled at reading the intricacies of lab reports as well. Thus, a teacher may encourage a student to report not just a *difference* in two cells but rather the way in which two cells are different or appear different after a stimulus is introduced.

Various disciplines of science offer their own flavors of literacy, as is the case in other fields of study. When cause and effect is reported in physical sciences, processes are most likely the topic (Zwiers, 2008); however, chemistry presents these at the molecular level, and biology casts light on organisms’ adaptations or actions within cells.

Precise language prevents students from mistaking correlation for causation and identifying the trigger of a reaction. Intentional instruction relating to these details can support a student's development in the technical aspects of reading scientific texts.

Increasing productive interactions between students and their science textbooks is likely to require an approach unique to the field. Fortunately, this can also be done in a way that promotes scientific thinking skills, which makes time invested in such strategies less of a concession for science teachers (D'Alessandro, et al., 2014). One such method suggests that readers track vocabulary terms, concepts, evidence, and examples while reading. Breaking down text like this makes the density of the meaning less overwhelming and allows students to identify which parts are less accessible to them. Being able to articulate what caused the confusion rather than just stating that one is confused makes a student more accessible to a teacher in follow-up instruction related to a passage or if an academic intervention is necessary.

Experts working with secondary science curriculum have also suggested that the difficulties in working with scientific text could be an impetus for changing how schools offer this coursework. This debate hinges on the perception of what goals are for students in science courses. Are objectives more directly related to procuring information or methodology? Currently, schools tend to emphasize the acquisition of information. Shifting to a curriculum based on inquiry with an infusion of reading strategies is an approach some are advocating to find a better balance in making this field more accessible to secondary students (Johnson & Zabucky, 2011).

Social Studies

Informational text shapes student learning in all social studies courses. Within this general discipline, the most prevalent literacy studies focus on teacher and student experiences in history classes. While studying maps, assessing graphs, and interpreting data and political cartoons are exercised by students in history classes, daily reading experiences encompass textbook work in addition to primary sources. History reading has some overlapping features with social studies and natural sciences, but the discipline provides nuances for student experiences (VanSledright, 2004). These unique features require specialized instruction and skill development.

Some history teachers subscribe to the use of historical documents in guiding analysis of events as opposed to relying on secondary sources to convey occurrences. While extensive textbook reading in history classes would place fewer demands on students since there would be more skill transfer from other classes, doing so has some negative attributes. History teachers who assign textbook pages as a means of students acquiring information run the risk of diminishing a reader's role as one who constructs meaning (Nokes, 2008). Sam Wineburg (2010) suggested that the third-person voice used to report events in textbooks poses problems for student readers. The omniscient voice of these creates an illusion of expertise. In one of Wineburg's seminars he worked with 22 Minnesota educators to compare learning from history textbooks with stories offered by narratives crafted within the context of an historical event. Working from original stories exposed the educators to the need for different skills to support understanding the texts, including identifying the bias inherent to an author's point of

view. However, this depicts a more realistic representation of events than a distant account from a faux expert. Student engagement and intellectual application climb through the use of historical documents due to the multiple interpretations to which students are exposed with this methodology. Primary sources place more intellectual demands on students, so teachers utilizing these types of documents in a history course can expect that unique needs will surface.

In the past, some teachers simply avoided addressing skills related to examining primary sources and only used textbook accounts. With the presence of the Common Core State Standards, new goals specifically compel practices that empower students to interpret meaning from these original documents (Breakstone, Smith, & Wineburg, 2013). Among the skills in the history/social studies aspect of these standards are analyzing primary and secondary sources, citing textual evidence to support arguments, considering how an author's perspective influences a message, corroborating multiple sources, and developing historical arguments. As part of their work at Stanford University, Breakstone et al. have developed assessments that teachers can use to determine their students' abilities in these areas. They designed this work to fill a void they identified in historical literacy: Assessments tend to be either too simple with multiple choice tests measuring recall or too complex in the form of the College Board's DBQ, Document Based Question, asking students to synthesize meaning from 10 to 12 primary documents. Their work has concluded that further efforts should align assessments with skills specific to historical literacy.

Teachers who sculpt historical inquiry skills using primary documents are unlikely to be able to afford students to read independently as often as those using secondary sources that describe events. Field experts emphasize how complicated reading history is. Processes in interpreting text include examining its source, subtext, context, and to what degree it is corroborated by other sources (VanSledright, 2004). Even when the surface meaning of text can be decoded, primary sources invite students to engage in critical thinking skills (Nokes, 2008). Among the assistive practices through which students can succeed with primary sources are building context for the document being examined and using a graphic organizer as a means of scaffolding (Nokes, 2011). Students improve at drawing conclusions and engaging in historical reasoning as consistent opportunities to practice these skills occur. When text that is germane to a particular time period or dialect surfaces in letters, journal entries, and newspaper articles (Nokes, 2008) that students examine, students are required to decipher meaning within that unfamiliar context. Additional factors that guide processes in uncovering meaning relate to the source and bias being communicated. To assist with definitions and phrasing problems, teachers may provide students with modified versions of original documents. Images, photographs, and artifacts also fit within this discipline (VanSledright, 2004). While these may extend themselves to students independent of their reading comprehension skills, they entail visual literacy. The constructive procedures in which a reader participates are paramount in determining effectiveness in gaining understanding from history coursework.

Vocational

In most secondary school environments, the bulk of vocational courses are electives. Thus, the students in these courses are often studying a topic that is of particular interest to them and is more likely to be viewed as a potential career avenue than the required coursework of English, science, or social studies. On the other hand, students who have elected to enroll in vocational courses are likely to be drawn to the field based on its activities and applications rather than to consider the role that literacy plays in it.

Like science texts, vocational reading is more likely to include procedural descriptions. Students in vocational courses are also likely to encounter authentic text in the form of trade manuals (Gulla, 2012). Trade manuals place demands on technical literacy due to the intensified presence of subject-specific vocabulary. Teachers in vocational courses extend their curriculum to students with a casual interest in the subject area when they can equip students with understanding of the technical terms needed to learn from trade manuals and other guides. Neglecting to provide instruction relating to such terms makes the course material inaccessible to students who are not already familiar with the field. While all subject areas face this, vocational courses amplify this issue since some secondary students may already have work experiences relating to the content while others are novices to the subject area. On the other hand, a student who has experience building furniture may struggle when instruction for the process is communicated through a written plan as opposed to an apprenticeship. Thus, teachers in vocational courses may be dealing with students who possess trade skills and now are in

need of being able to incorporate literacy as part of the process of advancing in their abilities.

Each of these secondary content areas poses distinctive forms of text and situations in which students apply what they acquire. While it is helpful for secondary schools to provide teachers with professional development opportunities specific to literacy, viewing this process as uniform through all content areas is a mistake since English, science, social studies, and vocational teachers have different needs. With that in mind, distinguishing skills that overlap from those that are field-specific honors instructional needs better and is more likely to be welcomed by teachers. Both teachers and students need to be able to recognize how general literacy principles follow them as they move across subject areas in the course of a school career and into their adult lives (Lai et al., 2014). With the role of teachers in communicating these fundamentals to students, the next section of this review will address teacher perceptions relating to literacy instruction.

Teacher Perceptions of Literacy Instruction

Content-specific work dominates the high school setting. High schools band their teachers by field, which is a product of teacher licensure as well. With these practical factors shaping the secondary environment, the teachers in it tend to view themselves as experts on their content. What becomes detrimental relating to literacy is if secondary teachers are not willing to embrace the role as literacy experts within their fields as well. Associating assumed expertise with expectations of literacy skills others desire may seem daunting to teachers without a degree specific to eliciting such performance from their

students. Refusing to accept this role undermines the effectiveness of the educational process. In this segment of the literature review, the following topics will be explored: A teacher's role as a literacy guide, professional development training teachers in this arena, and the connection between reading and writing in high school classes.

A Teacher's Role as a Literacy Guide

The range of texts presented in a class environment may be demanding for students. As teachers expose students to more opportunities to read these texts independently rather than limiting reading experiences to a smaller subset, students need more tools to guide them (Fang & Pace, 2013). Discipline-specific texts can be rife with dense academic words and phrases, and yet teachers and students need to be able to recognize that such wording builds meaning and transmits value. How a teacher opts to frame reading can impact how a student perceives and interprets the text. Work by Manarin (2012) suggested that one helpful mechanism is to present reading as a compendium of choices that one can control. In training students to operate in this paradigm, a teacher must demonstrate how struggles impact reading, provide feedback to students, and offer different text types. If teachers are going to be effective in a role guiding growth in literacy, they must abandon the common practice of retelling what students read. One of the effects of this practice is that it trains students to dismiss assigned reading, and it impels teachers not to evaluate students' independent understanding or interpretation of texts. This type of practice is more likely to be a function of a teacher who views texts as vehicles for conveying information, but seeks to maintain tight control over where the vehicles deliver students. As part of the work of

Denton et al. (2015), such limitations are criticized in lieu of providing students with frequent exposure to both literary and informational texts. Expanding the text range within a class, providing strategies, and giving students feedback on their understanding of text are all means of teachers embracing that being a literacy guide does not simply mean directing students to content-based readings. Teachers who are good readers may underestimate how much practice students need to acquire content from text (Conderman & Hedin, 2010). This obstacle reduces the time spent in literacy instruction and reflects the blind spot that experts sometimes possess when working with students who are in the early stages of burgeoning in their understanding.

Research suggests that encouraging teachers to be more deliberate in addressing the role that literacy plays in their course work pays dividends. Identifying the role that being able to study the literature tied to content area plays in future learning is one way to do this (Harrevald, Baker, & Isdale, 2008). Teachers are also more likely to embrace literacy instruction if their syllabus includes documentation of the literacy elements of the course. Literacy instruction is one way that effective teachers encourage students to be lifelong learners (Sturtevant & Linek, 2003). Without being able to read independently, student learning hits a ceiling in experiences both inside and outside the classroom. Thus, in-class experiences that help students acquire and develop their content-area reading skills can benefit students in multiple environments. Fisher and Ivey (2005) recommend selling teachers on being able to “capitalize” on literacy skills so that they are more willing to welcome professional development in this aspect of instruction.

Professional Development

Professional development can be experienced through a teacher's individual choices or as prescribed by district or administrative initiatives. Whether the professional development is voluntary or mandatory may have an impact, but this literature review seeks to examine points emphasized by these seminars as well as other collaborative efforts in this category. Some of these practices may be specific to a particular discipline. Gearing professional development in this fashion might rely on leaders in professional learning communities to use current research to shape educators' work. An example of this offered by Nokes (2008) would be history teachers focusing their efforts on historical processes and the use of primary documents in their classes. While administrators are likely to have certain fields of expertise in which they are familiar with literacy-themed research, they may need to make a conscious effort to direct faculty leaders to sources as a matter of professional guidance. Hiring a literacy expert to conduct a training session for teachers may assist teachers in their strategy implementation, but such seminars may not have lasting value without a more eminent presence related to this area. Some schools have literacy specialists on staff. When these professionals communicate and cooperate with content-area teachers, the importance of literacy within the learning environment is cultivated (Fang, 2014). Key attributes of a culture with this feature are consistent messages and terminology, discipline-specific literacy instruction, and heightened awareness of the importance of literacy in content processes. In a whole-school approach to literacy, details on what to teach and how to teach it are necessary (Fenwick, 2010).

One avenue for ongoing efforts that guide literacy instruction is the work of Professional Learning Communities, or PLCs. These collaborative teams, usually bound by commonalities based on student grade level or subject area, can determine focus areas to influence, strategies to implement, and then work together to analyze the data obtained (Lai et al., 2014). By discussing intricacies in instructional practices and activity design with teaching peers, instructional efforts relative to student literacy performance can be evaluated. After being trained in explicit literacy instruction, teachers apply the new understanding as a way to advance student comprehension. This study identified that more research is necessary to test the effectiveness of advanced teacher instruction occurring with an emphasis on content-area strategies.

Connection between Reading and Writing

Writing is an additional component to gauge when examining literacy. As teachers ponder their responsibilities relating to student reading comprehension, they would be wise to consider the companionship between these skills. Manarin (2012) reported that students who wrote about reading processes in a log became more aware of how to structure writing. The study conducted examined the work of postsecondary students with the researcher closing with conclusions to guide secondary instruction as well as that of postsecondary institutions. Structural knowledge is one of the skills benefiting both writing and reading effectiveness. In research centered on student understanding of informational text, Marinak and Gambrell (2009) also identified the structural knowledge undergirding students' comprehension. Beyond the skills that students possess and are coached to develop, their intrinsic traits influence their

effectiveness in reading performance. The final section of this review will examine aspects relating to student engagement as it pertains to reading.

Student Engagement

At the secondary level, adolescent students possess individual tendencies in terms of attitude and motivation shaped by past academic experiences and future aspirations. Whether these traits encourage or inhibit learning may vary based on subject area, text type, or the perceived challenge level of the activity. Acknowledging the presence of these factors is not enough for secondary teachers; instead, it is necessary to calibrate activities and activate student curiosity based on an understanding of these traits. This portion of the literature review will analyze research relating to student engagement factors. Progressing through this category of information will include looking at attitude, motivation, and the challenge level of the text.

Attitude

Positively impacting student attitudes toward a literacy task stems from actions that ward off frustration that arises from text difficulty or a low interest level. A study examining 170 ninth-grade social studies students to gauge the impact of activating prior knowledge as a pre-reading strategy determined that connecting a personal experience made the text more accessible and enjoyable (Spires & Donley, 1998). However, this study did not produce gains in comprehension. A study like this suggests that pre-reading engagement strategies can be used to stretch student exposure to more difficult texts, but that corresponding limitations in comprehension would require teacher scaffolding to support learning from these texts.

Among the means of supporting student comprehension of difficult texts are retrieval practice through formative assessments that guide key ideas and inferences (Littrell-Baez, Friend, Caccamise, & Okochi, 2015). By using open-ended response techniques and offering immediate feedback, a teacher can encourage student metacognition. As the students become more aware of applied thinking processes, reading comprehension gains are more likely to occur.

Another factor in attitude is the perception of the importance of reading and writing. At the secondary level, students and teachers are more likely to view content as the primary focus (Lai, et al., 2014). If reading and writing are deemed to be less important than content issues, teachers are reluctant to address the problems tied to these skills. An initial step that these researchers recommended is helping students recognize that literacy knowledge transfers across disciplines. However, a barrier with this is that studies have shown students to be ineffective at adapting methods for different text types (Manarin, 2012). Text types may vary within a particular subject area as well. Regardless of subject area, literacy gains have resulted from elaborating on answers, increasing interest in the passages, and building teacher-student relationships with an academic focus (Lai et al., 2014). All of these actions positively influence learners' attitudes. Teachers have opportunities to positively impact all of these areas during activities that are specific to literacy as well as in other classroom experiences.

Motivation

Related to a student's desire to acquire understanding through informational text is the degree to which the work piques his or her interest. Articulating a goal or helping a

student identify the value in an activity supports motivation (Manarin, 2012). While assigning a reading strategy may be helpful, greater benefits arise when a student feels intrinsically motivated to use a reading strategy. Providing opportunities to interact with peers about the text is another way to increase motivation (Nokes, 2008).

In the pre-reading stage, teachers might suggest that students predict what will occur in the text. While this may activate a motivation to evaluate the prediction, it may also inhibit student persistence. Adolescents may reject a text that suggests that they abandon their current opinions (Manarin, 2012). Making a prediction aims to heighten student curiosity. A supportive element that may guide this is providing images in advance of reading a text. Since informational text tends to be harder to picture than works of fiction that employ more imagery, giving students something to visually imagine while reading can help them hold attention through the duration of a text.

A related approach is to present a controversy that a single text or multiple text addresses. In a process like this, students use the text provided to answer a provocative question. Supporting instructional elements for this process guide students' interpretation skills and practice with skills involved in weighing evidence (Nokes, 2011). As students demonstrate capabilities with text as a means of answering prescribed questions, allowing students to pursue answers to their own questions can further activate curiosity. The inherent challenge that arises in seeking answers in a single text or in multiple texts is one of the factors supporting motivation, but there are other aspects to the perception of challenge within the reading process.

Challenge Level

Providing one text or related activity at an optimal challenge level for a class of 30 students at the secondary level is likely to be difficult for a teacher. Calibrating the text or task as a means of differentiation is one way to land the work in more students' sweet spots for increasing interest without making the task seem impossible. A teacher needs to consider the students' vocabulary level prior to assigning a text. Using an additional source or reference tool to look up a word or phrase occasionally is likely to inhibit reading if it is necessary throughout the reading of a text (Manarin, 2012). Furthermore, an outside reference is not going to act as an independent guide for students' comprehension of schema or syntax. Since studies have shown students who already have lower comprehension levels to struggle more with informational text (Denton et al., 2015), teachers should expect that they need to provide more supportive instruction prior to assigning informational text to students. Neglecting to do this may land the text outside of an optimal challenge level and result in the student avoiding the task.

Summary

Tracing through the themes of the literature review provides insight about existing precepts about instruction on informational text in secondary classrooms. The degree to which one might value this study hinges on accepting a constructivist approach to literacy instruction. As participants in a class with reading activities, students use the texts to build meaning about the course content. Additionally, students extend information relating to the course beyond the boundaries of direct instruction. Teaching students to

recognize text as an agent of perspective and requiring discussion and writing to accompany reading shape this process. Although comprehending text is a basic goal in such activities, the strategies, methods, and techniques that support literacy intend for students to exceed this level of understanding. As teachers identify the objective of instruction accompanying literacy, students trained in the use of alternative readings to supplement or even replace textbook work become more agile in acquiring text-based knowledge while also experiencing more authenticity in their learning. Once students read and write effectively in a content area, sharing their understanding evolves in addition to consuming information.

Comprehension issues arise when this process of constructing meaning presents obstacles. Adolescent readers may struggle more with informational text than narrative forms. When text complexity is high, it may exceed students' comprehension capacity. Being able to read the words of a text does not guarantee understanding of it. Inferring meaning and grasping academic and discipline-specific vocabulary may escape some readers' grasps. For an experienced reader, text structure offers clues relating to argumentation or the description of a process; however, these tactics elude a reader struggling to decipher a text's words. Even for a reader who lacks comprehension prowess, teacher instruction about structure and elements within informational text may provide clues that help unlock meaning. An additional contextual aide is how much background knowledge a reader possesses about the subject of a text. Teachers who help students identify connections between their existing knowledge and the passage being read open doors to greater understanding. Neglecting to address background knowledge

creates a larger chasm between a struggling reader and the text. Instructional practices that support students of all ability levels embrace the constructivist philosophy and emphasize that all students can build meaning from text. Whether teachers enact these strategies before, during, or after student encounters with text, they foster comprehension.

Another key aspect of informational text within a secondary school is how the text varies in different content areas. While overlapping characteristics exist, different subject areas present unique traits as well requiring instruction attuned to identifying and meeting the student needs inherent to them. Becoming a literacy expert within a content area requires teacher willingness. When teachers opt to embrace this role, they guide students in the craft of reading within the discipline. Professional development that implements current research in seminars or professional learning communities increases educators' effectiveness as reading teachers in their content areas. Of particular benefit are tasks urging ongoing emphasis on classroom literacy practices as compared with single-event workshops. Teachers providing writing opportunities to complement reading advance their students' overall literacy skills. These linguistic tasks are mutualistic in reinforcing student success with text.

Lastly, student engagement as it impacts attitude and motivation is an additional factor in comprehension of informational text. The common link between these two relates to the student perception of the work's value. Activating student voice and curiosity are ways to improve these learner traits. Reading that represents an optimal challenge level for the student to work independently or with the assistance of a few definitions of words within the text increases student engagement as well.

The purpose of this review was to examine how researchers have contributed to the field of literacy in the secondary classroom. Once students surpass the primary level of instruction, attention on literacy comprehension tends to yield to content-area concerns. While diverting some attention from literacy skills may be necessary, deserting these processes may be catastrophic for struggling students. Without secondary teachers who invest in student literacy comprehension, marginal readers stay on the fringes of academic performance (Harrevald, Baker, & Isdale, 2008). Thus, it is worthy to determine how teachers invest class time in guiding literacy comprehension in their content areas. In the next section of this dissertation, I will describe the research methods that directed this study.

CHAPTER III

Research Design

The purpose of this study was to determine what instructional actions secondary teachers design to guide student understanding of informational text. In an effort to find out how teachers promote informational text comprehension, I conducted a study in the context of a high school where the teachers are identifying and implementing the Common Core State Standards for informational text. As classroom teachers strive to help their students attain these standards, it is reasonable that their instruction will be aimed toward goals relating to both content and literacy skills. Use of complex texts must be part of the routine in these classrooms, and the teacher in each of these classrooms must have an interest in continuing to progress in the enactment of instructional strategies that foster student understanding of these texts. Since there is currently a lack of intensive studies about the instructional practices, observational reports of classrooms in which they are enacted, and teacher reflection about their effectiveness, this study sought to open an arm of inquiry to advance both instruction and student comprehension relating to informational text.

Phenomenology

A phenomenological methodology was chosen because of what the teachers being examined represent. I believe that teachers who engage in the intentional action of incorporating literacy into content-based work at the high school level represent a common experience. By delving into the teachers' actions and thinking, I sought to describe the essence of their experience with these practices (Creswell, 2013, p. 76).

With this intention in mind, other teachers and administrators now have the opportunity to identify how the participants' instructional actions support student acquisition of both literacy skills and instructional content.

Defining characteristics. Using phenomenology, the lived experiences of the participants as teachers in their respective classrooms and subject areas were examined (Creswell, 2013). As a researcher, it was necessary for me to bracket myself out of the study. In doing this, I recognized my past experiences as a content teacher using learning strategies designed to guide student literacy. However, the act of bracketing meant that while I examined my participants' experiences, I looked at their engagement in these processes with fresh eyes without having my past experiences drive my observations or conclusions. In describing the phenomenon within the study, my emphasis was to reflect on central themes that comprised the nature of the teachers' lived experiences.

Phenomenology affords a researcher's experiences to shape the observation process as opposed to denying any influence of his or her past; however, when it comes to drawing conclusions, the results of the study as opposed to the researcher's experiences, should be the grounds for support. Additionally, as an observer, my experiences helped me notice, report, and characterize actions. Having served as a teacher-observer, I had developed a protocol for recording what I saw and heard in classrooms to provide a picture of the interactions occurring between teachers and their students. As a researcher, I needed to be cognizant of the assumptions I have developed relating to literacy in my own content-area classroom at the secondary level so that those did not seep into my analysis and conclusions. Allowing participants to conduct member

checks in which they had an opportunity to revise observational records to reflect their perceptions of what I saw and heard reduced the influence of my potential biases.

Phenomenology is one of the approaches used in qualitative research, but it has variations within it based on the practices used to observe, analyze, and report findings. Descriptive phenomenology was developed by Edmund Husserl as a way to attain meaning by probing deeply into experiences (Sloan & Bowe, 2014). He believed that the depth led to descriptions that were closer to reality. Martin Heidegger studied under Husserl and created his own variation of phenomenology that became known as hermeneutic phenomenology. In this strand, based on Heidegger's construction, a researcher cannot fully bracket oneself out of the study. Being neutral or detached is impossible, so the researcher serves as an interpreter of the occurrences. Interpretive, or hermeneutical, phenomenology recognizes that the researcher not only describes events, but also guides the reader through them in an interpretive manner.

The field of hermeneutic phenomenology was the primary influence on this study's methodology. Contrasted with other types of phenomenology, hermeneutic methods afford more interpretive license to researchers in an effort to understand the meaning in data gathering and analysis (Sloan & Bowe, 2014). In terms of data gathering and analysis, the researcher's background influences interpretation and reporting in this approach. Given my experiences as a secondary-level teacher and observer of peers, it was eminent that data gathering, organization, and interpretation would be affected. Asking follow-up questions about supplemental issues that emerged in participant responses and observations fit this methodology as well.

The complex interactions of teacher, students, and text could also be reported within moments of class activities using hermeneutic phenomenology. According to Friesen, Henriksson, and Saevi (2012), this method allows the researcher to capture moments in the classroom in the manner of freezing a waterfall. This metaphor presents possibilities of seeing a prompt provided by a teacher in a new light without compartmentalizing and is neither fully subjective nor objective. Recognizing the way that the people and pedagogy interact to create a classroom environment is an asset of this methodology.

Rationale. Phenomenology was an appropriate arm of qualitative research to utilize in this study because research in this field is heavy in reporting student successes tied to particular strategies, but it is light in terms of examining the depth of teacher actions in constructing a culture of acquiring literacy skills. In addition, the commonalities and differences present when the experiences of secondary teachers seeking to meet content expectations while opening doors for students to learn about the subject area in other environments invite further discoveries. Shared traits among the participants were that they were all teachers in the same rural Minnesota high school. However, they differed in terms of the content area in which they teach. Experiences of teachers in English, science, social studies, and vocational studies were examined.

While descriptive phenomenology was the core influence on the research process, interpretive, or hermeneutical, phenomenology was an appropriate extension of the field for this study. Since my background as a secondary teacher allowed me to observe as a professional peer, the subtleties of the teachers' practices were apparent. Follow-up

questions that accompanied the interviews opened up opportunities to probe more deeply into the teachers' influences and experiences. These would not have been possible if I had detached my own teaching and observing experiences from the study. Applying interpretative processes allowed for a more detailed and rich description of the teachers' actions with respect to the phenomenon of promoting student comprehension of informational text in their classes.

Participants

Assembling a collection of four teachers, each representing one of the content areas, began with a letter to the principal of a high school in rural Minnesota [Appendix A]. The selection of the school was based on the school being one that has trained its staff in literacy practices and implemented the Common Core State Standards. A purposive sample was garnered by asking the principal to identify one potential participant in each of the content areas being examined: English, science, social studies, and vocational courses. By using purposive sampling, I amassed teachers who specialize in the act of incorporating literacy instruction into content-area course work.

The school is located in a rural Minnesota town that is a county seat and home to several national and international corporations. Manufacturing and medical facilities are primary employers in this community nestled in an agricultural region of the state. The junior-senior high school houses grades seven through twelve with an average grade level consisting of 130 students. The free and reduced population (students who receive governmental financial assistance toward school meals) comprises 40 percent of the school enrollment.

Upon receiving the principal's recommendations of four participants, I contacted each individual using an email message [Appendix B] and a telephone call to follow up and offer answers to any initial questions or concerns these participants had prior to agreeing to be part of the study. The consent form for the study [Appendix C] further clarified the agreement between the researcher and each participant. I made it clear to each subject that member checking would be used to ensure that, as a participant, messages relayed would be consistent with the participant's intention. Thus, while I had opportunities to interpret what I observed, I did not have an overarching ability to transmit what I perceived to be occurring in each participant's classroom.

Data Collection Procedures

The data collection process was comprised of an initial interview, the participant's activity log, two classroom observations and post-observation conversations, and a concluding interview. Thus, the research triangulated the teachers' experiences as they reflected on their instructional design, were observed implementing instructional designs in two lessons, and presented a record of actions they took to promote student comprehension of informational text. In a qualitative study like this, using triangulation increases the authenticity and trustworthiness of the data being gathered. If the data collected indicates a theme, the degree of corroboration that exists among the parts of this study will improve the validity of the research.

Initial interviews. Once the four participants agreed to enroll in this research project for the 2016-17 school year, an initial interview was conducted of each teacher. In this interview [Appendix D], each participant was asked to describe his or her use of

activities to guide student understanding of informational text. Supplemental questions related to the timing and effectiveness of the instructional practices in this realm. A closing question asked each participant to explain his or her perception of the experiences students have with the informational text encountered in that particular subject area.

Activity logs. Participants also logged a series of literacy activities self-selected as representing strategies employed to guide student comprehension of informational text throughout two quarters of the school year. Each quarter is approximately nine weeks long. These were gathered over a time period following the initial interview and excluding the two classroom lesson observations that occurred over the course of the school year.

Classroom observations, field notes, and member checking. I observed two class periods conducted by each participant as a nonparticipant and completed a field notes form consisting of two columns recording what I saw and heard as a way to trace the instructional activities as the teacher and students experienced them during the lesson [Appendix E]. Among the items to record included the teacher's use of prompts and visuals, materials (electronic or on paper), and interactions that occurred among students or with the teacher or other instructional assistants as students worked with the tasks. Again, the participant had an opportunity to member check the field notes and also review the data collected during the observation to assure accuracy of events and interpretation.

Post-observation interviews. This post-observation included an opportunity for the teacher to offer insights about the effectiveness of the learning activities in promoting

student understanding of informational text. In the post-study interview, participants were asked to share ways that they cultivated a classroom environment that invited students to experience informational text both as an individual and as part of a classroom community. The post-observation conversation was recorded as well in case questions arise in the process of reviewing this data set.

Researcher. I have taught in a high school setting for the duration of my career. Since the study encapsulates a range of content areas, it is worthwhile to know the researcher's areas of specialty. I am licensed and have taught high school social studies throughout my career. I have a minor in English and, through the application of a variance, taught English classes during my first two years as a teacher. My interest in this research topic arose because, at one juncture of my career, I became more intentional about the role that informational text – that of a textbook and other sources as well – played in my students' learning experiences. As I became more involved in improving their experiences with these texts, my attentiveness toward instructional strategies used as part of this process rose.

Data Analysis

After collecting data from the initial interview, the participant's activity log, two classroom observations and post-observation conversations, and the concluding interview, I searched for themes relating to how teachers in various content areas design instruction relating to informational text. Each of these stages allowed for various actions in terms of analyzing the data gathered. As expressed in the consent form, each interview was recorded, transcribed, and coded. The coding process included recognizing themes

using the open, axial, and selective coding paradigm to generate categories and themes as a means of “aggregating the text into small categories of information” (Creswell, 2013, pp. 85-87). Open coding, which codes data into its major categories of information, entailed an adherence to the words of my participants. This list was lengthy and the “open” aspect allowed for the emergence of multiple avenues. At the axial coding stage, a narrowing of the categories into the presence of core phenomenon occurred as I sought overlap among the initial list of words and phrases from the data. In the final step of data analysis, selective coding, I used the previous stages of analysis to develop a theory of how teachers in various content areas design instruction relating to informational text. I aimed to make a series of propositions about these teachers’ actions.

In reviewing the participant logs as well as the field and post-observation notes, I searched for the themes generated by the initial interviews while also being flexible about identifying new themes that arose. The primary research question being studied was: How do secondary teachers design instruction to promote student comprehension of informational text? In addition, this study sought to uncover the following secondary questions: How do activities conducted before, during, or after, the reading of informational text vary in their effectiveness? Which strategies do teachers find most effective at promoting student comprehension? How are instructional strategies promoting reading comprehension employed across a variety of curricular areas?

With these questions in mind, a concluding aspect of data analysis was to determine more specifically how the literacy practices compared among the four different subject areas. The concluding interview revisited the questions provided in the initial

interview. The intent of asking the same questions was to uncover deeper understandings of the participants' perspectives about actions, timing, and effectiveness relating to instructional design that helps student comprehension of informational text. Due to curiosity that arose during the observations, I ended the closing interview by asking the teachers to talk about ways that they have cultivated a classroom environment that invited students to experience informational text both as an individual and as part of a classroom community. Overall, I sought to answer the following question: As teachers with specific knowledge in different subject areas guide students to make discoveries using informational text, how do their instructional actions vary from and resemble each other?

CHAPTER IV

Interpretation of Findings

The research in this study aimed to identify ways that secondary teachers were increasing student comprehension of informational texts in their courses as a way to master content and engage as lifelong learners. Substantial to this study is distinguishing each of the four content areas and classrooms according to their characteristics. Understanding the courses in the context of a student's experiences in this high school for grades 7-12 provides insights about the clientele in these classes. Thus, prior to examining the themes that arose from the data, it is helpful to articulate the differences amongst the settings in terms of factors like the curricular roles of the courses observed and their physical arrangements.

Classroom Settings

English

The students in this teacher's classes were non-honors track students who were primarily in the senior-high grades (10-12). When the study occurred, the course content aligned tightly with a curricular package, but the way the students experienced the instruction was teacher-driven yet responsive to students' needs and interests. Daily and unit plans stemmed from essential questions meant to align with broad experiences and concerns germane to senior-high students learning to understand themselves, their communities, civic life, and relationships as a whole. The informational text in these courses contrasted with the fictional text, but the nature of the course units in the American Literature class was that the two or more types of text were viewed in concert

with each other. Professional Learning Community (PLC) conversations and goal-setting were regularly associated with literacy as this teacher collaborated with other teachers of English in this high school.

The physical arrangement in the classroom is one with about 30 individual student desks. While this was the “base” position in the class, each of the observations occurred with students working in groups and realigning the desks to accommodate interactions for groups of about four students. The ease with which the students modified the desk arrangement during observations suggested that this was a common practice in the classroom.

Science

This teacher had a single-grade load as the course observed existed as a required class at the junior-high level. The students represented a range of abilities as there was no tracking or alternative coursework for them at this stage. Since the school entity is a high school housing grades 7-12, students in the junior-high are viewed as being in transition. In a grade-level team, the teachers engaged in grade-level conversations that applied Middle School philosophies relating to building student capacity for success. An additional influence on this teacher’s practices regarding literacy was the National Science Teachers Association (NSTA). The “5E Model” calls for students to engage, explore, explain, elaborate, and evaluate in their science work and was developed by the Biological Sciences Curriculum Study in 1987. Additionally, during the school year in which this study occurred, this teacher collaborated with both a grade-level and

department PLC. In this sense, instructional conversations emphasized performance and expectations with both clientele and content in mind.

The physical setting of this science classroom reflected student contributions with posters they had designed related to vocabulary terms and processes used in the classroom. Like the English classroom, individual desks were the primary means of student seating; however, the classroom was nested within a room featuring a laboratory around the perimeter of it. The teacher acknowledged that desk arrangement was a regular consideration meant to support the style of learning on a particular day. Desks were usually paired so that students had an “elbow partner” for conversations and support. Sometimes the paired desks were structured in multiple rows. One of the observed arrangements was with two double-rows of desks that faced each other, a pattern that allowed for conversations in pairs but also invited more whole-group sharing for a discussion phase within that lesson.

Social Studies

Like the science teacher, this teacher’s students were enrolled in the courses observed as part of their required classes at the junior-high level. Most of the students that this teacher served in these classes have exhibited below-grade-level reading ability on high-stakes tests. Their coursework was designed to meet state standards for social studies while also addressing skill deficiencies related to reading. The teacher designed instruction and assessments to meet both content and literacy goals. Some days of the classes were structured to bridge both areas while others were more directly dedicated to

one or the other. For the purposes of this study, class activities that addressed both content and literacy development were observed.

The physical arrangement of the classroom featured maps and vocabulary references with a geography emphasis. In terms of seating, the teacher referred to the groupings of individual desks as pods. These contained an average of four desks and encircled the classroom. They were labeled with continent names and arranged to reflect relative location on a Eurocentric map. The teacher had assembled bins of materials at each pod, primarily supporting vocabulary acquisition and used as part of the regular class routine, typically at the beginning of a class period.

Vocational

The courses in this teacher's load were all elective courses, so students had opted to take these to fulfill other credits toward graduation. Students enrolled in these courses were mainly in the senior-high grades. The students represented a mixture of ability levels, but the teacher shared that the general perception among the students who select these courses was that they expected to do more hands-on activities as opposed to reading and writing tasks. However, in this teacher's PLC consisting of a range of vocational teachers, incorporating literacy into their fields to help students apply these skills in authentic environments has been a priority.

The visuals posted in the classroom represented an array of classes and activities. A bulletin board featured materials from colleges and universities that provided students with connections to ways they could continue pursuing interests related to coursework supported by these electives. Since labs occurred in the class on a regular

basis, some of the materials incorporated in these were visible. Again, the desks were individual with their initial arrangement being in rows, but the students were apparently accustomed to shifting them into groupings that befitted interactions among about four students.

The physical environments developed by each of these teachers factored into their instruction. Sometimes these elements were intertwined with lessons on a more dynamic basis while others simply provided a backdrop for the activities that ensued. With the settings of each of the four classrooms portrayed, the next portion of this chapter addresses the data themes that emerged in the study of how these four content teachers developed their students' comprehension of informational text.

Thematic Analysis

Making Text Accessible

The first of three themes arising from the data was that secondary teachers promote student comprehension of informational text by making text accessible for their students. This theme has a diagnostic element to it that a teacher exercises based on past student performances or anticipated difficulties related to the text itself. A text may be difficult because of its structure or vocabulary; however, it may also present obstacles because it is not naturally engaging or communicates numerous complex ideas. In the process of gathering evidence about what these four teachers did to aide their students, it became apparent that evaluating the compatibility between their students and the informational text being used was a priority. If the students lacked a particular skill or vocabulary level, then the student-deficiency part of this compatibility was scaffolded

with an academic intervention to help the student access the text. If the text possessed characteristics that would impede understanding, then the teacher would find a way to unlock the meaning of the text itself, usually prior to the students reading it, but sometimes as part of the reading process. While some strategies surfaced, the emphasis was on targeting the gap that existed between the student and the text. In this process, the teachers demonstrated knowledge of their students' abilities and interests. This segment of the analysis will examine the way teachers varied instruction in response to student needs, supported comprehension, addressed vocabulary issues, and increased focus and annotation and engagement.

Varying instruction to respond to student needs. The most prevalent form of making informational text accessible to students was that these teachers identified an interference that was going to prevent students from understanding text and intentionally addressed it. The social studies teacher shared that this was a consideration in the process of selecting a text for students. This teacher usually seeks a text in the middle of the comprehension levels of the students in the class. While this has served the teacher well as a general practice, some primary sources - like the Declaration of Independence - have exceeded the grasp of struggling junior-high readers. One mechanism this teacher used for the most difficult texts is reading the text to the students so that they hear it the first time they encounter it and then gradually releasing control of the learning processes to the students,

So having someone watch them read - and articulating, modeling for them how to answer questions and what the thought process for the students should be initially - and then the second time, scaffolding for them, and finally having them answer those questions for themselves.

A second reading as a whole group sometimes occurred as well in this social studies teacher's classes. When the teacher noticed that some students needed a sentence broken into smaller segments in order for them to be able to extract meaning, this intervention was used. Pairing texts with images that round out what the words are saying and demonstrate the words in action was a way that the social studies teacher demonstrated this during a lesson observation. In this particular lesson, students examined the United Nations Charter alongside a series of images that represented principles communicating the purpose of this organization. Thus, visuals helped students picture how more abstract ideas surfaced in the context of people's lives around the world.

The process of simplifying the text to extend it to students took several forms. When the social studies students worked with the 1948 Universal Declaration of Human Rights, the original text was so difficult that a revised version was used. In addition to less complex language, titles for each article were provided so that students could anticipate the message of a segment prior to reading it. Besides making this particular text more accessible, this process helped students recognize that texts contain guideposts to help with understanding as well. This teacher also tailored passage selections to student interests. When the outcomes sought did not require a particular topic within geography, the teacher assigned passages or provided choices with students' interests as a priority. By the end of the year, the teacher knew the students well enough to cater possible geography project ideas with them in mind, "This kid is going to want to do a project that is more scientific, so I tried to tailor the options to their strengths." With an attractive topic, the teacher found that students were willing to encounter more

complex readings and managed these better because they possessed a stronger knowledge base in that area.

For the English teacher, varying instruction in response to student needs addressed other nuances of the student and text being disconnected from each other. The teacher called the instructional approach necessary to helping students access the meaning of the texts they read “blowing in the sails.” During one of the observations of this classroom, students were uncovering the meaning of an Ernest Hemingway story, “Old Man at the Bridge,” by researching and curating informational texts that revealed more about the historical events surrounding the story and its author’s life. Some students needed regular affirmation from the teacher as they made discoveries about what they believed to be the identity of the soldier in the story and how the enemy was being portrayed in it. As students shared their findings with the teacher, some of the questions posed by the teacher in response to them were of this nature:

- What makes you feel like that?
- What does his lifestyle tell us?
- What would his [Hemingway’s] job [during World War I] have been like, and why would he have chosen to write about this moment?

By asking students questions like this, the teacher offered encouragement toward progress in a scholarly way. The students provided a sense of what they were finding, and then the teacher nudged them toward deeper discoveries.

In this way, the teacher acknowledged, affirmed, and steered student findings that were incomplete so that the student think more critically about the information discovered. For this task, students were working in groups and would eventually share their findings with the rest of the class. Sometimes a student question about how to word

something yielded a teacher response of, “Just like you did to me.” The teacher could not possibly anticipate every question that would arise nor provide students with every possible resource. In the observations, it was noticeable that the teacher needed to be mindful of the desired results in processes and products even though there was definitely not an answer key to consult. Additionally, impromptu thinking about how to guide students without divulging too much information was evident. Occasionally, the teacher offered more direct hints to students, but the students were the busiest bodies in the classroom during this process. That being said, the teacher’s job required mindfulness, a commitment to the process of students mining resources connected to the meaning of the short story, and a vision of the completed work.

Another aspect of bridging the gap between students and text that the teachers addressed was achieving skills specific to informational text. The English teacher recognized early in the year that text analysis was a shortcoming for the students. In order to help students get better at this skill, the teacher shared that including, “That’s a great answer, but show me how you know. Go find the page number,” as a pattern of response helped develop this skill. As the weeks progressed in the class, students became more accustomed to answering such questions armed with a piece of text evidence to identify the words that led them to their responses.

Besides establishing the purpose of an activity, like being able to provide text evidence to demonstrate an ability to analyze text, the English teacher expressed a need to know the students well in addition to how an activity helps the class answer an essential question that is relevant to the students. For the English teacher, this essential

question was an instrumental force that gave greater meaning to all of the coursework and elevated the role of all texts, literary and informational alike, as a means of helping students learn about the world and themselves. “For [this class with students] not looking at using reading to benefit them outside of school, the essential question has been helpful,” shared the teacher. The students in the non-honors courses have scored lower on state comprehension examinations and tend not to read for pleasure on a regular basis. Informational text, by comparison, relies more on an essential question to help students see a relationship between them and the text - to help establish relevance for digging into the meaning of a text that, by its nature, may be more dry or monotonous, according to this English teacher.

In the science class, being responsive to student needs took a different form. According to the teacher’s activity log, a reading was assigned to help address a common misconception about how cells are in something rather than that they make up living things. Follow-up activities ensured that this piece of foundational knowledge did not escape the students. This exhibits how teacher selection of informational text can address content knowledge - and provide more opportunities for students to see how that surfaces in authentic environments as opposed to acquiring that understanding through note-taking or another medium. Another one of the activity log entries identified that tasks combining the skills of executing instructions and doing math computations eluded students. Thus, the science teacher needed to figure out ways to help students be attentive to steps communicated in directions and to overcome their math issues.

While the teacher never felt like the students totally conquered the challenges of reading instructions meticulously, natural consequences related to errant lab work provided opportunities for students to experience why this was a fundamental skill to hone. Regarding the math calculations associated with readings like one about the age of fossils, students succeeded more when they shared their arithmetic on white boards (assigned to pairs or individuals) so that there was both a private and public aspect to the work. The teacher relayed how this transpired,

Now, with everyone using a white board, we just work at it. This kid who couldn't see how to do it, when they see that kid's board, they are like, "Oh, yeah! Okay - when you do it that way - that makes sense. So how did you show how you calculated the half-life to show how old a fossil is?" Everyone is showing what they did on their own white board, so it keeps them from disengaging.

When it came to the process of sharing their calculations, this positively affected the class dynamic related to reading about the ages of fossils. The teacher also noted that this is a discipline-specific skill,

In science, we have to be able to put our own ideas out there and allow others to see them. And it's a safe place to do that. Within the whole group, we sometimes come up with a really good answer that develops because of our discussion. So, all ideas are valued. It's a neat process.

More about the conditions supporting this atmosphere will be addressed in the next theme of this chapter's analysis.

Adjusting instruction to meet student needs can also allow teachers to sequence learning experiences in a logical way. Since the life science course devotes time to examining body systems, the teacher teaches students about some aspects of brain function at the beginning of the year in anticipation of how they will attain understanding in the course. The teacher shared how this gets communicated to students regarding

being attuned to reading, “When you read that means you can read and you can tell me you read, but that doesn’t mean that you had your brain on your reading,” so one consideration is how to keep students aware of that and address those issues. The teacher helped students distinguish between the mechanical act of reading and the ability to acquire information from reading. In one of the observations conducted, students were encouraged to draw DNA, or deoxyribonucleic acid, models to keep them on-task, help them picture what they were reading, and give the teacher a visual sense of whether or not they were accurately interpreting the article. The teacher circulated throughout the room and provided feedback about the models being drawn.

The timing of this activity was another way of furnishing students with instruction to suit their needs because it followed a lab in which students extracted DNA. The teacher not only offered feedback about the students’ drawings, but also asked questions about how the reading, drawing, and lab intersected to help students understand more about DNA. The combination of activities allowed for differentiation, or instruction that varied according to an individual student’s understanding. While the parameters for the student work meeting the teacher’s expectations in the social studies and science classes were tighter than those present in the English class, being able to design activities according to what students need based on content expectations as well as existing ability levels or potential points of confusion is a challenge facing all teachers. Employing instructional strategies specific to informational text that respond to students’ needs requires expertise in one’s students’ abilities, the content area, and the actual reading that

the students are doing. The second sub-topic of making text accessible deals with students being able to comprehend, or understand, the assigned passage.

Comprehension. Another aspect of making informational text accessible to students is ensuring that they are able to comprehend and apply the text assigned or available to them. If this is done in a passive way, without any indicators about what a student is experiencing, a teacher may be misled to believe that an absence of student questions about the meaning of a passage indicates that the students understood the text. Consider a learning environment in which a teacher asks students to read a page, provides a few minutes, and then follows this activity with, “Do you have any questions?”. This is a passive way to assess student understanding and may unintentionally imply that students should not have any questions about what they read. Examining the vocational teacher’s activity log revealed an animal science class being provided with a graphic organizer to capture key information from a textbook segment about developing rations. The teacher expressed that the value of this was two-fold: it gave students a more active means of processing the reading and offered an alternative to lecturing about a topic. With the coursework being part of students’ elective choices as opposed to the required menu, the teacher feels pressed to offer a variety of learning experiences,

My goal is to try to create a class that kids want to take so that they will go recommend it to other students...I have to vary my methods of instruction because we have to do something different almost every day. Again, I want students to recommend my class to other students - I’m trying to sell them on it.

The lifeblood of all classes is students, but in the environment of elective classes, a reputation of value and enjoyment is crucial to program existence. If strategies for

comprehending informational text are repetitive and bland, students may not only be less effective at reading but view the class negatively. Meeting both kinds of needs, affective and cognitive, can occur by fluctuating among an array of ways to convey content information.

While teachers of elective courses may feel more pressure to keep their clientele enthused and science teachers are seeking to introduce students to processes used throughout the field, a major challenge for English teachers is the range of topics addressed in content-area readings. The informational text that surfaced in the English course required the teacher to be able to help students unearth meaning from texts that extend to material specific to other content areas. In fact, one of the pieces of satire the English students discussed during an observation presented a challenge in the form of interpreting the commentary conveyed by subtleties like the quality of cuts of lamb meat. If the students were going to grasp what the author was communicating, knowing which cut was more of a delicacy was needed. The teacher knew that this was not part of the students' background knowledge as they confronted this text, so that was one of the keys provided in helping the students unlock meaning from the satirical work.

In reflecting on tasks from early in the year in which the students studied seminal documents of American history like the Declaration of Independence and the Preamble to the U.S. Constitution, the teacher shared, "It wasn't until we really started dissecting, breaking into pieces, and charting and mapping the structures of those texts that the kids started to say, 'Oh, that's what those texts are. That's how they're different from each other.'" In the activity log that the English teacher submitted, it noted that being able to

unravel the meaning of an autobiography required students to be able to recognize that attitudes, customs, and beliefs of a culture make up its social context. Student comprehension issues in this class ranged from specific words and phrases in a text to structural elements. In addition, aspects of meaning might be accurately acquired, but a text may not reach its greatest capacity for student learning without being able to uncover other characteristics of it. Teacher expertise, gained from familiarity and experiences, can be one of the ways to maximize the value of text.

Considerations about text complexity also face teachers. Unlike other subject areas, the informational text in the American Literature class taught by this English teacher gave students a relatively easy surface-level reading task. It was noticeable for the students that the informational texts were at lower complexity levels, or Lexile ratings, than the fictional pieces that they read. The teacher estimated that literary readings in the class usually fell within the 1300-range while informational text was classified in the 800-range. Due to this, the informational text invited some of the struggling readers to feel more confident in their understanding of the text. By comparison, student ownership then became easier in the English class's informational text work than the literary readings.

For some students who are really analytical or scientific in their thinking, they loved getting those pieces because that was something concrete. They aren't looking for figurative language or trying to infer deeper meaning. They look for an answer and find it [in the informational text].

Even though the students tended to find the informational text less interesting, they found that it was usually more manageable than the literary text of the course. The materials provided for this class were accompanied by teacher guides that showed their

Lexile levels. Textbooks tend to provide this data as well so that teachers select material that aligns with their students' reading levels. Teachers may or may not seek a Lexile score for supplementary readings, but tools exist for estimating these figures for selected passages.

Even if the complexity level of a piece of text was high, teachers in this study found ways to help students gain meaning from such material. For students in the social studies class observed, the teacher made complicated phrases relatable for students. In a lesson about the purpose of the United Nations, the junior-high students encountered the phrase, "friendly relations" in the source they were examining. The teacher asked them, "What do friends do for each other?" which yielded appropriate student responses and then led to students transferring their everyday knowledge of that phrase into the global context of this organization's work. This teacher also noted that selecting appropriate levels of text for student comprehension is demanding. In choosing sources to use for class, picking out a text that falls in the middle of the comprehension levels of the class's students has been a rule of thumb that the teacher feels has worked quite well.

In concluding the focus on comprehension, it is helpful to examine some of the thoughts the four teachers shared next to each other rather than in the context of their individual experiences. The following reflections convey the value of looking specifically at the impact of existing student skills and what teachers seek to accomplish through text:

[Social Studies] [For some students] *being able to read a sentence in its chunks is still overwhelming.*

[Vocational] *Comprehension is the student's ability to use what they are reading.*

[English] *They start to feel like, “I can...” and that helps my class.*

[Science] *I think when they are questioning, when they are making connections, when they are sorting, categorizing, and finding things to hook that new information on, [the student is understanding reading]...*

As teachers aim for student comprehension of informational text, there are academic skills to be identified and executed, but there are also pieces of this process relating to how a student perceives the text that can either be defeating or empowering. Evaluating the relationship between the text complexity and a student’s reading level with that particular segment requires constant gathering of information as well as factoring in possible past experiences that could assist understanding. As the teacher determines whether the student and text are compatible, the student is determining whether the text is accessible or not as well as whether it is worth understanding. If a teacher does not bridge the gap between the text and the student, the student cannot be expected to acquire content knowledge from text throughout the course. In terms of the mental aspects of comprehension, student confidence levels may only be as strong as their most recent reading experiences. Besides the comprehension issues already discussed, another potential disruption to this is in the individual words that comprise a text. When these words are examined for their meanings, the academic term of *vocabulary* is used. Addressing vocabulary was the third most common emphasis for the teachers in this study in terms of making text accessible for students.

Vocabulary. At a basic level, vocabulary development provides students with a way to construct a meaning for each word within a text. The secondary teachers in this study, as part of their efforts in promoting student comprehension of informational text,

acknowledged that words that confound students may or may not fall within the boundaries of content-specific instruction. Not addressing these perplexing words or assuming student understanding of them compromises the effectiveness of tasks that hinge on text use. As was addressed in the previous section, the English teacher needed to be sensitive to vocabulary within particular passages based on its functionality within the text type. For the other three teachers, targeted vocabulary strategies were among those that the teachers incorporated as part of regular lessons.

Examining the targeted strategies among the three teachers revealed some similarities and some differences in approaches. The science teacher noted that classes in that discipline, particularly life science courses, burden students with an inordinate amount of terminology, much of it containing Latin root words and prefixes. To chip away at the volume of words to learn, content-specific terms for a unit were posted in this classroom, and the students had participated in creating these representations with associated visuals of what the term looked like and meant. Additionally, the science teacher discussed “just in time” vocabulary practices prior to students reading a piece of informational text. The phrase means that the teacher gives students the meanings of selected terms “just in time” upon assigning a text. Supplementing this practice for the science teacher was identifying words that the teacher expected the students to “read around and figure out what they are” with the explanation, “I just want to make sure that I give them enough help that they don’t get overwhelmed.”

During the observation process, students asked questions about some of the words that had prefixes or roots that they recognized from previous work. The teacher did not

restrict assistance to content-specific words. While students were discussing the article about DNA, one of the students exclaimed, “I made a giant connection!” related to one of the chemicals discussed. This was followed by another student sharing that remembering that *cyto-* meant *cell* in their previous work helped in understanding an article. The conversation in the classroom shifted to the students sharing vocabulary-related observations with each other without any prompting by the teacher to move in this direction. It was as though the vocabulary itself was intriguing because it provided clues about the text as well as other meaningful activities familiar to the students.

Vocabulary development occurred in the social studies class as part of bell-ringer activities, games, and through the introduction of terms as new units began. Pre-learning vocabulary so that students can plug a definition into a sentence to build meaning may be helpful, but the social studies teacher noted that, even within social studies classes themselves, words may have different meanings thereby limiting the effectiveness of merely providing definitions. An example that spanned this teacher’s course load was the word *shield*, which means something different in physical geography than it does in a history class. The social studies teacher, viewing vocabulary as a key for unlocking text meaning mentioned,

I think the pre-learning of vocab has been very effective. I think the part of having them read it themselves and having them hear someone who has modeled it who can read it fluently (a teacher or another adult) so they can hear what it needs to sound like and what is supposed to sound like in your head as well as showing things like how your eyes are supposed to follow text along a page.

Furthermore, a challenge accompanying students or age levels who are unfamiliar to a teacher is trying to figure out what they are likely to understand independently, so the words selected for pre-teaching may not always be clear.

The timing of vocabulary assistance surfaced in the previous examples, but was more directly addressed in one of the teacher experiences noted in the activity log. After some experimentation with students identifying unfamiliar words while reading the text for the first time, the vocational teacher expressed, “[the vocabulary] needed to be taught before the reading was accessible,” so working through these prior to the initial reading became the preferred approach for that teacher. The vocational teacher also noticed that students found conversations about word meanings to be engaging to the point that they would end up having great discussions debating what words meant in the context of particular articles after they had read the articles. The teacher knew that the burden of understanding the words was too much for them to bear individually, but not so demanding that they couldn’t collaborate and discern from other resources.

During one of the observations, several different students would check to see if a word was related in meaning or use to a similar word or phrase that they already knew. For example, *meander*, related to rivers, and *degradation*, related to soil quality, were familiar to student contexts of people “meandering around” and actions perceived as “degrading.” The teacher confirmed these relationships with some qualifiers, and students were content taking these word meanings and applying them to the subject-specific reading. As part of this process, the teacher also encouraged students to use their electronic devices (cell phones for some and laptops for others) to gather

definitions. Through these experiences, the constant was that students wanted to be able to construct meaning from the words within informational text passages and the variable aspect was how a teacher addressed this need and involved students in the process of requesting assistance in uncovering the terminology.

Annotation and engagement. While analyzing the data, interview threads regarding annotation and engagement arose. Looking at them as separate items aimed at making text accessible led their presence among the data to be less than those of varying instruction in response to student needs, comprehension, and vocabulary. When examined collectively, the function of annotation as a tracking process for a reader becomes clearer. While some of the instructional strategies float between being used before and during reading, the annotation process definitely resides in the “during” part and can be a way of keeping students engaged while in the process of reading.

The classes observed in this study employed specific annotation strategies, usually with highlighters or colored writing utensils for visual purposes aiding review at a later time. The English teacher stated that annotation was an emphasis in American Literature class and had a positive impact on the students’ experiences, “They have colors in hand all the time; they are always writing in the margins.” What began as a prescribed task was now becoming a preferred habit for the students.

In the science class, the teacher guided them in an annotation strategy related to numbers and provided feedback to them when their annotations lacked meaning or specificity. This teacher found that when students annotated what surprised them, it helped launch meaningful discussions. Past experiences with having student mark what

they found interesting led them to be more likely to annotate items that they preconceived to be important, thus reducing some of the active possibilities extending from this, according to the science teacher. With the science students having a workbook-style textbook, annotation through highlighting and drawing became a habit when that examining those pages of text and visuals were assigned. The science teacher displayed posters about annotation options. These prompted students to mark surprises, what the author thought the reader already knew, and items that challenged, changed, or confirmed what the reader knew. These strategies arose from a book by Beers and Probst (2015) which has been a common read among teachers in this school. Three participants in this study cited this book as influential in their annotation activities.

The social studies teacher found success with text analysis development by having students highlight where, within a text, answers to comprehension and reasoning questions were based. The text analysis in junior high social studies was more concrete than the type occurring in the English class, but the skill of rooting responses as informed by the text spans disciplinary areas and difficulty levels. In the vocational teacher's class, among the items targeted for underlining and highlighting were purpose statements and examples of targeted concepts. In reflecting on these, the vocational teacher added that doing this "allows kids to track their opinions as they go through a reading." This teacher felt like engagement was the primary benefit of annotation because it made the act of reading dynamic and demanded visible reactions during student interaction with text.

While annotating a text may keep a reader engaged in the process as an active agent seeking to comprehend its meaning, the act of engaging a student in reading can

also be viewed as an instructional action used “before” reading a text. The English teacher specifically stated that activating background knowledge enticed students to become more interested in a reading. When working with students who do not have a natural inclination toward reading, a particular subject area, or school overall, engagement rises in importance for this teacher. This is also evident as a priority through the English teacher’s words, “I just have to get them ‘in’ before I can get anywhere.”

Similarly, the social studies teacher demonstrated this with the United Nations lesson as the organization being formed was likened to that of a “club” coming into existence to confront the crises related to World War II. In the lesson observed, the teacher showed a video clip about the UN’s mission in action as it portrayed its roles with refugees and children, development and poverty, and fighting disease and climate change. Likewise, the use of images that students were pairing with purposes served a similar function in helping students picture the organization’s functions aiding people around the globe rather than simply reading words about what it did. In the middle of completing the activity, one of the students exclaimed, “This is actually fun!” It seemed as though the pre-reading activities made the informational text meaningful and drew the student’s interest. Additionally, looking at that statement through the lens of other aspects of text accessibility makes it seem like an appropriate degree of challenge also existed. The student, task, and text were compatible.

The science teacher emphasized an entry point to student engagement in one of the lessons observed by having students put check marks next to actions performed by the excretory system. Further conversation did not confirm or deny those initial thoughts,

but the reading was used to let students revisit them and revise their answers accordingly. The science teacher also included an activity log entry for a student reading about genetic testing. The teacher's intent was not to make the students experts on this task, but rather to draw their interest as a curiosity and unique application of genetics. In this study, engaging students invited them to become actively involved in learning. The next theme of data analysis that ensued was that teachers who promote student understanding of informational text create conditions that celebrate and support the learning process.

Creating Conditions that Celebrate and Support the Learning Process

The second of three themes suggested by the data was that secondary teachers promote student comprehension of informational text by creating conditions that celebrate and support the learning process. Examining this theme spotlights the relationship and interactions between teacher and students as the students execute the tasks designed to help them uncover meaning from informational text. The willingness of students to demonstrate critical thinking as a result of reading the text and engaging in the activities offered evidence of these conditions. However, a key agent in these by-products of the experiences was the teacher. During the learning process, students had chances to immerse themselves in the reading and activities or distance themselves from the class operations. The interviews and observations in this study revealed that the teachers were role models in the learning process and students followed suit by becoming more entrenched as owners of the work that would result in them acquiring knowledge. This segment of analysis will capture how teachers created conditions that

celebrated and supported the learning process by emphasizing collaboration, teacher discoveries, and discussion.

Collaboration. A collaborative environment, evident in the students working with each other as well as the teacher contributing as both a facilitator and fellow learner, emerged as a factor in creating conditions to celebrate and support the learning process. Listening to the teachers describe their intentions and reflections as well as observing how these interactions affected the classroom environment gave rise to this theme as one that influenced these classes. Elevating oneself as the omniscient expert never seeped into the words or actions of these teachers, neither in the public setting of the classes nor in the private setting of the interviews. However, students appeared to trust the teachers as people who would guide their learning. The tasks were sometimes structured to put students in roles as experts - or at least people who acquired more information about one dimension of a topic than others. Due to this, there were certainly nuances of topics about which students became more familiar than the teacher. This did not threaten the balance of the classroom, rather it seemed to empower students and provided an infinite amount of learning possibilities as opposed to a sense of a glass ceiling for a lesson.

At the onset of the study, the social studies teacher shared that, when reviewing answers related to multiple choice questions assessing student comprehension of a text, it was not uncommon for the process to involve a teacher prompt, students answering, and then “all working together to find the answers.” In one of the lessons on this teacher’s learning log, students were assigned to be “experts” on particular chapters by annotating

important information. Although the students were not always successful at determining which information was worthy to share, they became the voices of that material for their classmates. It is likely that this process made students aware that learning was something they could do independently of the teacher's voice. Additionally, they learned to value each other's contributions to tasks and often mediated decisions about what to share in small groups. The teacher reflected that this was a skill they needed to refine, but that did not mean they would abandon this style of learning for the rest of the year.

At other times when activities stretched the students beyond their comfort zones, the teacher felt like there was an acknowledgment, "...This is going to be rough, but we're going to get through it together." The students seemed to sense that the teacher understood their struggles and had a sincere interest in helping them. In the teacher's view, the smaller classes, especially ones that she had in class all year, really amplified this collaborative experience, "I was able to cultivate...almost like a little family, where we are all working together, respecting each other. 'We're all in this together.'" The teacher felt like a mentoring relationship was achieved in most cases by making connections with the students.

The English teacher, in the preliminary interview, discussed an interaction with the representative of the curriculum company that provided the foundational materials for the American Literature course. Upon seeing all of the texts, questions, and assessments comprised in the materials, which teachers often create, organize, and assemble for students, the teacher asked, "What's our job?". The company representative responded, "Engage. Learn with the kids." The teacher had viewed this skeptically at first, but found

that it could be accomplished with responses like, “What did you think about this line?...I’m not sure what I think about it.” The teacher felt like the mysteries of experiencing the curriculum for the first time assisted in creating an environment in which students were connected to learning. If that had been the only factor, the teacher did not think it would have been enough to foster the collaborative environment.

The essential question that shaped lessons gave them a purpose to fulfill, as the teacher asserted, “...that’s how the environment is created, that’s why we ban together - and also, why individuals get connected to the learning...because there’s a reason.” To some degree, the teacher will attempt to replicate the experiences of this first year with the curriculum in future years in the sense that approaching lessons and units with a sense of not knowing what class discussions might tackle or address as a related experience created a vibrant environment.

The nature of students sharing what a reading in English meant to them is more fluid than what more content-based courses invite. Even when these English students examined informational text, the context in which they studied it relied on a literary text. One of the observed lessons involved students seeking to make sense of a short story by Ernest Hemingway by seeking information about the setting, author, and events at the time the story was written. In one exchange, a student told the teacher about a fact relating to the percentage of peasants within the population of Spain at the time; the teacher said that that would be an important piece of information because it would give greater meaning to one of the other group’s contributions since they were going to share information about the political atmosphere of Spain at the time. Knowing that there

would be a culminating session of sharing and listening added to this lesson, and the teacher had no choice but to step back as the person who knew what would be offered by students. As a student shared a newly-found fact with the teacher, the teacher validated the comments, “Now we can read this different from how we did the first time.” When work was challenging for students, it actually enriched the class experiences, “It was easier to struggle when I was struggling with them,” confided the teacher, “It felt like a group - we are all in this together.” Despite the teacher feeling stumped at times, collegiality in figuring out how to make sense of a single text or a series of texts in order to address the essential question helped them build something. The teacher felt like students entered the challenging lessons on anchor texts with the sense of knowing that it would be tough, but they would get assistance and eventually make sense of it.

Collective contributions in a jigsaw activity occurred in the vocational class observed as well. This was one of the preferred methods used with informational text in this teacher’s classes. The aim of doing this was to help conversations in the classroom pursue various angles of an issue and then assemble ideas to put it all together, according to the teacher. The preferred methodology was to provide different readings throughout the class prior to a discussion, “...and then, as a whole, we can come to a consensus on, “What is the issue overall? How did the viewpoints vary on this?”. During one of the observations, a student question about tilling that had been asked of the teacher privately was introduced to the whole group to be revisited during the discussion phase of the class. A comparison of options was offered, and students participated in sharing their understanding of criteria farmers would take into account in order to make decisions

about these processes. Thus, what had been one individual's curiosity was validated and further unwrapped as part of a collaborative process.

At the beginning of one of the science class observations, a student asked a question about the previous week's learning relating to saliva, and the teacher responded, "Let's investigate...it seems like that's a question we should make sure to answer." With this phrasing, the student heard that the question was valid and worth answering. Other questions arose about tears and how they fit into the excretory system. The teacher did not answer these questions at this stage of class, but allowed them to hang in the air of the classroom. Students did not react adversely to this or insist that the teacher answer these questions at that instant. Instead, they seemed to trust that the learning process would lead them to these answers at some point.

The teacher's preliminary interview offered insights about how this classroom functions, "Students need to own it. We're going to help each other." After the students read an article during one of the observed lessons, the students were asked to give a rating regarding their interest in the article. The teacher then followed up with questions about what they did and did not like. In this class, not only were questions welcomed, but there were also opportunities to share their opinions about materials used to supplement learning. Making these conversations part of the environment reflected one of the teacher's statements, "In science, we have to be able to put our own ideas out there and allow others to see them...[This is] a safe place to do that." The teacher reaped the rewards of this when students shared their impressions of words from an article about DNA. One student asked about the presence of *-ine* words that seemed to be a

pattern. The teacher replied, “I think we should find out what that means.” When the students used white boards to share design projects, the teacher concluded the activity by asking them, “How many of you - if you could do this over - would totally design it in a different way?” The students affirmed that this was the case. Thus, some of the learning process characteristics that were being reinforced in this class were that wondering about something is necessary in order to acquire knowledge, noticing a pattern is part of learning, and learning is ongoing rather than final.

Teacher discoveries. Another influence in creating conditions that celebrate and support the learning process that persisted within these four classrooms was the presence and communication of teacher discoveries. Each of these teachers designed learning experiences for their students. Each one articulated goals for their students relating to both content and skills. However, the phrases, “I’m learning...” and “I used to think...” introduced statements in our interview dialogues, and that thinking frame surfaced in the class environments they influenced as well.

The teachers identified aspects of student comprehension of informational text that still challenged them. The closing interviews occurred during the last three weeks of the school year, and each participant shared at least one anticipated change in looking at instruction in this realm of their work for next year. One representation of a discovery that a teacher made was the vocational teacher saying that clarifying the purpose of different readings is one future target to meet. Expressing more specifics about the objective up-front may be a gateway to students having an accurate perception of the desired outcomes from readings.

The social studies teacher demonstrated this by recognizing that an elusive aspect of instruction has been finding the “sweet spot” in terms of how much help to give students. A dilemma this teacher has faced is when to provide academic interventions like partially-completed graphic organizers and content vocabulary aides within materials that students access independently. Both the vocational and social studies teachers were encouraged by what they felt they gained by tracking and reflecting on their work with informational text more deliberately as a result of this study.

With the curriculum being new to the English teacher this year, being frank about new discoveries was a major thread of the classroom experiences. It seemed like this externally-driven shift in how the literature class operated combined with the teacher’s growing familiarity in working with older students in the school to produce some initial anxiety and eventually, powerful learning. The teacher was candid about some specific pieces of understanding that arose through informational text processes.

I used to think that the only way I could use informational text was just the historical piece. There is so much more than that that is useful and helpful...The other thing about informational text is - my mindset about it - it was like it was a separate thing from what I do for literature. This is the first curriculum that married it to my literature...I have a little social studies love already, so I was pretty excited that the juniors were starting with the Declaration of Independence, the Constitution, the first unit was primary documents - every single one. [It was] painful...all primary documents so what we first have to study are the words that made us Americans, and then we can work through the readings that came from that. We got really bogged down. I struggled...with informational text and I think I might have illuminated some weaknesses of my own.

Despite feeling overwhelmed while getting acquainted with the new curriculum, as the school year concluded, this teacher reflected, “I think me not coming in with a pat set of answers...did a lot for our environment.” When class activities invited students to

uncover information and share it with their classmates, a behavior they exhibited was screening their findings - including new resources - with their teacher while they were in the process of compiling their presentations. The teacher enthusiastically welcomed these contributions for future iterations of this work. In addition to being willing to facilitate student learning, this teacher accepted responsibilities of learning as a teacher in a way that made the learning environment more fluid and authentic.

When students shared resources in the English classroom, they were not relegated to being only on the receiving end of learning. Likewise, these teachers provided students with insights about times in which they stepped into a learning role. In the science class, a spin-off conversation about how body systems interact and affect each other led to the teacher providing an example based on personal experiences. Due to an illness in the family, the teacher told their students about recent reading they had done about how people might experience symptoms in parts of their bodies from infections occurring in seemingly unrelated parts of their bodies. Students asked follow-up questions about this and offered some of their own examples of this phenomenon. Hearing the teacher describe the process of genuine research to learn more about a topic that had personal value could give students insights about how learning foundational elements of life science could open the door for future understanding that could be of vital interest to them.

On another occasion, these students were learning about Gregor Mendel, often called the father of genetics. One of the students asked what could have possibly driven him to want to know more about the pea plants he observed. The teacher shared some

background information about Mendel, fielded more student questions on this topic, and then concluded the conversation by saying, “Sometimes scientists don’t wear lab coats, and they are just people who wonder about things.” Through these experiences, the students had a chance to see that learning results from people who are curious and want to know more about what they observe to be true. This pattern of moving from not knowing to knowing and reporting a gain in understanding processes fed environments in which learning was an unashamed cultural norm for both students and teachers.

Discussion. Fostering a culture in which the learning process is celebrated and supported relied on strong communication pathways within these classrooms, and one of the primary means in which words and ideas flowed was through discussion. While the act of reading informational text in these classes was usually done by individuals, there were several instances observed in which students were arranged into small groups before reading so that they could engage in the pre-reading exercises together. It also appeared to be one way in which teachers could transition students from the reading process to the discussion process with a minimal interruption. Whole-class discussions regarding the informational text students had read also occurred during the observations. Sometimes these were by design, and sometimes they materialized as a result of a teacher conversation with an individual or small-group that garnered the attention of the rest of the class. When these transpired, students initially fell silent so they could eavesdrop on the conversation, sometimes even looking up to communicate that they were listening to it, and eventually, multiple students would join in the mini-lesson that was unfolding. The discussions that met the tighter scripts teachers had intended were more

integral to the conditions celebrating and supporting learning, but the other discussions arose as a symptom of those. It is helpful to focus on the physical arrangements and teacher roles in examining discussion processes.

Physical arrangements. Even though none of the teachers professed to one ideal way of organizing students for discussion, preferences surfaced in these environments. Twenty to thirty students populated these classes, and each of them sat in an individual student desk during the class periods. The science and vocational classes had other areas of the room designated for laboratory activities, but these were not utilized during the class periods observed. The social studies and English teachers arranged their students in desk clusters of four or five students, sometimes referring to them as pods. In the social studies class, these groupings were identified by continent names and used on a regular basis to address the small groups. The English and vocational classrooms' default arrangements were for the desks to be in rows, but students rearranged them as advised by the teacher in order to accommodate group discussions.

Two different base arrangements existed in the science classroom in the observations that occurred. Both of these organized students in shoulder-to-shoulder form with a partner. In one of these, all of the partnerships were facing a designated "front" of the class with a large presentation area being used. In the other alignment, desk partners were preserved, but four different sets of partnerships formed rows that faced each other. The center aisle in this arrangement is the location from which the teacher originated, although the teacher circulated during the reading and annotation part

of the lesson. The science teacher reflected on these adjustments, “I’m still trying to figure out what the grand arrangement is for the large-group discussions while still allowing for small-group discussions.” This teacher also expressed that establishing routines to help students rearrange their desks efficiently is worthwhile. With the physical structure supporting the type of discussion that is desired, these teachers attended to how to fortify discussions with academic features.

Teacher roles. Using discussion as a mechanism for learning spotlighted the abilities of these teachers to maintain a productive and harmonious environment. These actions supplemented both small-group and whole-group discussions. Interactions seemed to be rather natural in these classes whether they occurred among peers or with the teacher involved. As the science teacher stated, an undergirding existed, “It is helping kids build that capacity for how we talk to each other.” When these teachers framed class activities to encourage discussions about informational text, they invited student voices, leveraged curiosity, and provided prompts to structure conversations.

In the vocational class, the teacher sought student voices regarding their own experiences. This standing invitation was evident during the observation process in the way that students shared connections between what they were reading and what they had experienced. Providing these opportunities for conversations to blossom meant that discussing a reading could take varying time frames - from 15 minutes to more than one 47-minute class period. Additionally, the lesson might diverge in its focus, but the gains from these tangents were worth exploring. In reflecting on an occasion in which an article spawned an additional discussion day, the teacher noted, “They just had so many

good questions that I wanted to honor that, so we had the chance to talk about them.” Furthermore, the teacher felt like students have ventured into readings more purposefully when the texts generate discussions. The vocational teacher believed that students were exercising metacognition more while annotating when a discussion awaited their contributions.

Amplifying student voices surfaced as a priority in the science classroom as well. Students openly shared their observations and curiosities in a way that resembled thinking out-loud. Without being disrespectful to each other or the teacher, ideas voiced were done so with little hesitation. A conversation about a textbook diagram hatched a student comment, “It looks like corn on the kidneys! I think it is fat,” while another student chimed in that it might be kidney stones. The stream of observations was steady, and the teacher listened without overtly measuring what was being said, but sometimes asking a student to clarify or answer a question like, “What makes you say that?”. The goal of the conversation was not to produce a high percentage of accurate commentary, but rather to engage students in the processes of sharing what they saw - or thought they saw. The teacher provided more insight about these types of conversations during the interview conducted at the end of the study:

Within the whole group, we sometimes come up with a really good answer that develops because of our discussion. So, all ideas are valued. It’s taking the time to stop and have a class discussion...It’s providing feedback and being able to learn how to speak to one another and give feedback that is kind and respectful but that is also helpful. Not just, “Oh, that’s really nice, you did a really good job on that.” ...It’s just a lot of dialogue...it’s almost like having a class meeting at each of the steps.

In order for class discussions to yield fruitful ideas, the teacher honored students' voices indiscriminately and reduced anxieties about being incorrect.

Student curiosity rode close to the surface, possibly attributable to students not fearing negative consequences as a result of being wrong. A lesson reflection submitted as part of the social studies teacher's log noted that the students would seem off-task at times, but it was worth exploring tangents that they introduced. A reading about cotton-picking in the years leading up to the American Civil War ignited a class discussion about technology when a student asked about alternative methods that were used for this practice. In the English class, during one of the observations, student questions about word meanings were rarely answered directly by the teacher, but rather the teacher spun the inquiries into conversations that led the student to figure out how to interpret the word.

The benefits of wrestling with ideas and being curious about other perspectives led the English teacher to let an informational text discussion get somewhat heated, once in each semester from the same text. One of the conversations bubbled into a release of student emotions regarding perceptions related to race. Another one challenged seniors to think about whether they had earned their legacies or if others had charted their courses for them. "I love class discussion," remarked the teacher, "It's one of my favorite things...Once the conversations start happening, then we have a little family of people who are experiencing things - sometimes the same and sometimes differently." The first step to articulating one's own perspective is sometimes listening to another point of view. Since students exercised questioning skills and communicated

their curiosity in this class environment, the underpinnings that support controversial conversations existed already and equipped both the teacher and the students to navigate the situation.

At times curiosity was much tamer, but when the science teacher asked students if they wanted to change or add to their understanding of the relationship between blood and the kidneys, students knew that they could wage their thoughts without being compromised. In a conversation about genetics, students asked about whether altering DNA would change the taste of corn. The teacher strung the conversation into parent plants and traits and offered more information about soil type and moisture levels that drive scientists to modify existing seeds. Through such actions, the teacher lets student inquisitiveness influence class discussion and establishes new points of relevance between content and conversations. These teachers capitalized on students' ponderings in multiple ways.

When teachers provide structures for discussion, it is analogous to the way that graphic organizers funnel written ideas. In the vocational class, one of the discussions observed was following a problem-solution model. During one of the small-group discussions, the teacher directed students to organize poster-sized papers into quadrants for words, questions, problems, and solutions. In the English class, students shared findings and strengthened them with text evidence, but they were also asked to provide more insight about their ideas by answering teacher questions of, "What do you take from that?" or "Could you give us an example of that in this section?". In addition to prompts offered to all students and as a means of mining for more detail in individual responses, a

teacher might also use these to trigger students' thoughts when a concept is escaping them.

The social studies teacher talked with one group about how the United Nations' interventions in countries sometimes look like "doing something good so nothing bad happens," which led a student to refer to issues in the Middle East that have occurred in recent years. Upon receiving that nudge, the group was able to extend their conversation and work, talking about needs that exist in countries and among countries as part of people getting along with each other on a global scale. These teachers recognized that discussions promoting student comprehension of informational text relied on students investing in those conversations, so they found ways to activate students' interest levels related to this aspect of learning. The third emergent theme was facilitating activities that would lead students toward valuable understandings.

Facilitating Activities that Lead Students toward Valuable Understandings

The data indicated that facilitating activities that lead students toward valuable understandings was a third theme within secondary teachers promoting student comprehension of informational text. Exploring this theme calls upon characteristics of learning that have been implied so far and yet are embedded in the themes of text accessibility and conditions that celebrate and support learning. Students find class activities to be valuable in how they come to understand content and themselves as a result of their contributions of effort and time. The teachers in this study sought to make work relevant or interesting to students, give students chances to apply their

understandings, clarify the purpose for doing the work, and expose students to a variety of text types and information sources.

Relevant or interesting work. Promising that the outcomes of an activity will be valuable may not be effective without the process itself being interesting. These teachers of high school students discussed why relevance is important in order to promote student comprehension of informational text. The social studies teacher stated,

So I find that anything I can do to help them get interested in the content is big. Motivation is really essential to reading comprehension - motivation to read it, to finish, and to do well...The biggest difference that I've found on the scores that students get in terms of being able to comprehend a passage is based on how interested that student is in the passage. For them to be able to choose what they can read about has been really helpful.

The vocational teacher noted that work that was interesting helped her students feel like they got something out of it. One of the ways that this teacher was encouraged by what the students did with informational text this year was that the interesting articles increased the relevance of the classes. Seeing the way students were energized by their conversations has led the vocational teacher to be more alert for thought-provoking articles that can be shared in class. The English teacher noted that readings from the 1800s might seem detached from today, but the goal of reading these informational texts - as well as literary works like those of William Shakespeare - is to help students see what it means for them right now. Emphasizing a process in which students can "trust each other and say why each piece is relevant to themselves" helped build a community within the English teacher's classroom. In addition to relating text to individual lives, the teacher wanted students to make connections between readings and the community and

the world. Supporting questions that helped students see this in the English class included the following:

- Why did we read it?
- How did it fit in?
- Did it make you think of anything else coming up in your life or your world?

With some texts, in each of these classes, students needed more frontloading prior to reading a text in order to build their interest levels. In other cases, instructional decisions that shaped how they reflected on the text helped them find relevance. The science teacher framed relevance in this way, “[It] makes learning really visible to them, and I want them to understand how this connects to their lives.” The interviews revealed that the teachers focused on making certain that each reading and lesson associated with it intrigued students. The reasoning was clear from their statements, but seeing how this materialized in the observation process complemented these intentions.

Observing these teachers in action and seeing their activity logs provided specific examples of how they increased the relevance of their reading activities. In the vocational class, conversations that the teacher had during one-to-one check-in conversations elicited student questions specific to their own experiences. For example, some students were more familiar with bodies of water as fishing venues, some due to experiences swimming in rivers, and others based on regulations that farmers face in order to keep bodies of water clean. Circulating and providing opportunities for these conversations helped the students look at the article through their particular lenses. In the class conversation, since swimming and decisions by the Department of Natural Resources were both high-interest topics, the teacher engaged students with a deeper

conversation about littoral zones and how clearing out areas for swimming affects the fish. This extended the article and resonated with students.

In the social studies class, when the students examined the United Nations charter, current event issues that were familiar to students were invoked. The organization's responses to issues like the Zika virus and refugee crises in recent years drew the students into the lesson, along with the teacher's efforts to pair the text with visual images. In a geography lesson viewed, characteristics of places were not viewed in list form but rather in the context of how they impacted how the residents of those places lived and worked.

The science teacher fostered relevance by having students contribute questions that were included on a document for future review. Another way students were involved in determining what was relevant was through recording their "ah-ha" moments as they examined materials. The teacher also capitalized on a project that the students had completed in their health class earlier in the year. Pulling this into a discussion piqued students' interests. Thus, making interdisciplinary connections can strengthen the value students sense in learning about various topics.

Drawing thoughts on relevance to a close is this quotation from the social studies teacher about using student-choice with informational texts when possible,

They [the students] would have the opportunity to use what they learned and use the text they read to accomplish something else seems to give them relevancy in their work. It helps them understand it better, and they seem to enjoy learning it more.

This suggests that it was not enough for a teacher to tell students that their work or reading was interesting. However, if students felt as though the work was worthwhile, they were more willing to persist in tasks with a high degree of engagement. Relevance

provided students with an internal motivation to examine the text and complete the work related to it.

Apply understandings. Being able to apply understandings may be an offshoot of relevance, but as interpreted here, the distinction is that application is more of an external process the students are experiencing or will experience. Students who can apply their understandings are equipped to make decisions or complete tasks because of what they have read and considered. The text and associated activities pave the way for future work that enables the student to analyze and evaluate in a manner that resembles field-specific tasks. Thus, the integral aspect here will be grasping content-based ideas.

When the English class was observed working with the short story by Ernest Hemingway, the value gained was realizing how authors, in general, might construct stories. It was as though the Hemingway short story served as a case study for this. The teacher urged the students,

Dig into his life story to find out why he would want to show Spain through these images. Make sure you don't just assemble a list of characteristics. These should be things that connect with the story. What does he want the world to feel through this story?

In addition to helping the students build context surrounding the events of the short story, the reason authors incorporate various ideas, characters, and outcomes was at stake. The students in this class participated in both reading and writing as part of the learning process. Thus, they were learning about both processes and, while focusing on one story, seeing that an author's biographical experiences might be informational text that augments fictional text. In the English lesson involving a satirical work, dissecting word use for the purpose of influencing a paper students would be writing was an

objective. This lesson opened by looking at different words that could say the same thing, spent time examining word choices within a piece of satire, and closed by revisiting the way words reveal biases. Since the students would be expected to complete an explanatory essay in the vein of academic writing in the near future, it was important for them to get accustomed to using a more neutral term as opposed to one with positive or negative connotations. The objectives for these lessons connected with upcoming work in the course, so the students found value in future applications of the principles being addressed.

Applying understandings was apparent when teachers helped students decipher the impact that concepts they studied had on people in the world. As the social studies class worked to pair images with purposes of the United Nations, as stated in its charter, they saw authentic photographs that included a child under a mosquito net and an atomic bomb mushroom cloud. The task extended into global needs and the responsibility that the organization takes in addressing those needs. As the teacher reflected on tasks like this, the timing of when this can best mobilize student thinking came to mind, “I think they liked being able to find a real-world application to go with the text - I’m not sure if that is more during or after [the reading process].” When these students examined the impact of the Universal Declaration of Human Rights, they became engaged in this application process to the extent that the teacher reported students being stirred about what they discovered, “Oh my gosh, this country breaks 20 of the 30!...Are there any rights they don’t break?” Social studies classes like geography, civics, and history, are likely to encounter texts about policy. This suggests that helping students connect

policies with how they impact people motivates students to apply that understanding to a problem-solving process related to evaluating or crafting sound policies.

In the vocational content area, policies of government agencies, corporations, and individuals shape some of the courses. During one of the observations, an article dealt with soil conservation practices, and students wrestled with how to apply the article to issues about soil quality. The term *harrowing* in an article triggered a question about its purpose. The teacher provided some of the rationale behind harrowing versus no-till practices by farmers. This extended into a conversation about the use of injectors in soil and other decisions that farmers regularly make that impact their practice. The students generated this conversation by their curiosity, and the teacher was capable of addressing their questions and cultivating even more interest among the students. “You can’t just have them read it and answer some questions,” offered this teacher, “They should have something they can do with it...Students take our classes to be able to do things. When we read texts, we want to make them applicable.” Listening to the questions that students initiated on this topic revealed that they understood who the stakeholders were in terms of soil quality issues and how these varied based on locations. The question structures ranged from “Why...” to “Will we be able to...” to “How can we...” which all suggest that the students were thinking about the issues at an application level. The Professional Learning Community, or PLC, in which the vocational teacher participated throughout the school year, has addressed this topic. The teacher reflected that the PLC has discussed how important it is to make sure that the academic learning has a hands-on

aspect to it. The teacher reflected on the PLC's philosophy about how the interaction between reading and learning in their courses,

We would rather have a student be able to do something as opposed to rattle off facts about it. The strategies afterwards [post-reading] are most important to me because if they can't produce something based on the reading, then it seems like it wasn't worth reading it.

When current issues relayed by news articles can be part of the exploration in these classes, they provide ways for students to see how concepts they are learning about are being applied. The vocational teacher feels like this is a step toward the students using what they read because it pushes them to think critically about it. One of the activities that this teacher submitted as part of the activity log saw students playing the roles of stakeholders on an issue in their Wildlife Management class. The article and activities gave them a chance to practice viewing issues through the lens of a particular stakeholder, taking the person's values and beliefs into account as they collaborated with other students to determine how to address an issue. Simulation activities like this put students in the position of applying texts and concepts as part of a scenario. In vocational coursework, laboratory activities occur as well. These are the most direct examples of applying reading because they demand that students can follow steps accurately. The precision with which they execute these steps may determine whether or not the activity succeeds. Thus, like in the science class, applying reading may also surface in the form of following directions.

When application-level expertise developed in the science class, the text helped students see relationships among concepts. The teacher discussed goals associated with this, "You want them to draw [conclusions about] the way that the little messages lead to

big ideas. Huge ideas in science might be structure and function.” When students are applying their insights, they can identify the relationship between these two aspects of organs, cells, and other components of organisms. As the characteristics of these building blocks become more apparent, they can make more sense of systems and how they interact. The science teacher mentioned how this translates into the way students experience the course throughout the school year, “We’ll keep connecting all the pieces,” so students can recognize relationships that transcend smaller elements within the systems being studied. Other ways that the science students applied their findings included an article about wolf and elk populations in Idaho. The information from the reading accompanied a data table from which students computed the elk population change using a formula. Graphing the populations over a 10-year time period was another task completed with this data. Using the article, the students could determine more about the story behind the numbers they tracked. When teachers provide students with opportunities to couple a reading with other content-related concepts, the value of the text increases, and it would be likely to provide a greater incentive for students not only to read the text but also to fulfill expectations of accurate comprehension of it.

Designing a task that pairs these types of opportunities to apply text meaning would be a consideration of a teacher leading up to a learning activity. Students might be able to attain a finished product without reflecting deliberately on what the teacher had said to introduce the task. In looking at the sub-topic of clarifying the purpose for a reading, a teacher is likely to be more intentional in the communication process so that students consciously realize why a text is useful.

Clarify the purpose. Supporting students as they execute tasks that lead them toward valuable understandings involves a teacher clarifying the purpose of engaging in the reading and accompanying work. Articulating the purpose provides a hint of how the activity fits into a course, unit, or lesson. On a larger scale, illuminating the purpose bridges students toward field-based expectations that might be associated with careers in the content area.

In this study, teachers used either a posted statement or a verbal task introduction to express the purpose of an activity and could use it to place the purpose within the context of other class experiences. The social studies teacher's whiteboard post, "I can explain the purpose of international political and economic institutions," phrased the purpose from a student's perspective and connected the work back to the students' previous knowledge of the North American Free Trade Agreement. In a contrast to this, the English teacher introduced a lesson mentioning how their mastery of *bias* will be necessary to avoid weakening their ability to present a fact-based case in solid argumentation. This was stated as a necessary skill-acquisition prior to students completing a research paper. While the teacher stated the purpose, it was presented to them over a series of lessons and connected to small-scale items like word choice and large-scale items like the genre of satire.

The English and science teachers offered similar thoughts about offering a purpose prior to the onset of students reading a text. The science teacher stated,

So you have to give them a clear purpose for their reading - not just to complete the assignment; [rather things] like what question are you trying to answer, what decision are you trying to make - I want to give them a real good purpose...I have

found that is a very powerful piece in helping them get through their reading - and do well with it.

It is the combination of being clear about the purpose and doing so before reading that equips students to be effective in these teachers' eyes. The English teacher discussed the role this plays in planning as well,

I think my primary thought going into any piece of informational text is trying to create a *why* for my students. Why is this necessary? What does this have to do with literature? I have to figure that out - how I can communicate to kids what the *why* is going to be. First we make a frame for why to read it.

As students experience hearing or seeing a stated purpose, then that can influence their thinking processes and also eliminate unproductive thoughts wondering why a teacher would have assigned a text.

The timing of strategies - before, during, or after reading - was one of this study's sub-topics. As the vocational teacher reflected about purpose, it became clear that this is one of the aspects of reading instruction that can span all three junctures of the process. Notice how the vocational teacher addressed each of these stages,

I think you need to design instruction so that students see a clear goal in it. They have to see a clear purpose for it in my classroom...I need to know that my students understand the purpose of why they are reading something. Many of my activities include a purpose statement because of the curriculum I use, so they need to be able to understand why we are doing it. I have them do something to show that they understand why we are doing something [during the reading process]. I try to make sure that readings are valuable or applicable. I make sure that they know that the things we are reading in my class have value...my goal is not to get them into a particular career but to educate them about a certain issue.

During one of the observations, students anchored their "during" reading process in developing a list of facts about problems shared in the article and, "after" the reading, in reflecting on solutions that could be done to address these problems. Weaving a purpose

into each aspect of the process was evident in these classes. This teacher acknowledged that when students choose to take a class in the vocational sphere, they are not anticipating that reading will be a vital contributor to their learning. However, they will engage in the reading process when a compelling purpose exists. Examples of purposes used in the vocational classes are particularly practical, such as a reading about developing rations in an Animal Science class that was mentioned in the teacher's activity log. This does not suggest that a purpose is less important in the other types of courses, but accounting for students' expectations about the type of work they do in a class appears to influence the intentionality with which a teacher addresses this aspect of reading informational text.

This section demonstrated how purpose was addressed in the four different courses. It showed that these teachers were cognizant of creating tasks that had a clear purpose and in communicating that to students. In this last sub-topic related to facilitating activities that lead students toward valuable understandings, the way that teachers diversify texts across these content areas will be explored.

Exposure to various text types and information sources. English, science, social studies, and vocational courses have text types that might be considered more commonplace based on the kinds of skills students use and the work of the experts in their respective fields. The teachers also designed instruction to help students develop reading agility across various types of texts. Among the variations evident were those related to style, numerical influence, sources, and structure.

In one of the social studies class observations, the students examined a packet about Canada, the United States, and Greenland which included some paragraph-based text in addition to maps and tables. Reading from a textbook was not employed in this class, but some of the selections were similar in style to how a textbook would be structured. When this teacher worked with students who had been identified as struggling readers, some of the materials selected were geared toward particular skill deficits that had been apparent in the academic histories of the students. Other web-based materials were used as well, and the teacher identified the role of these,

[Some of the]...websites [we use] are really good at designing questions that are meant to show specific comprehension of the whole meaning of the text, picking out specific details that they have, understanding the author's point of view, understanding the tone, and at the end, they usually have some questions about vocabulary.

These kinds of resources provide the teacher with feedback about student performance and can inform future selections that might be used to convey or practice content-based concepts.

The science teacher discussed how a variety of texts helps to differentiate instruction for students, "It broadens it so you can look at a table and try to analyze that. I had never thought of that as informational text...the same with charts, graphs, and diagrams - we are focusing on those." A textbook was used occasionally in this class. The teacher noted that graphs and diagrams typically require more space and color. When pointing this out to students, this teacher offered a reasonable plea to students not to neglect these on the basis of how much more it costs a textbook company to use graphics like this. Another aspect of textbook instruction that this teacher

deliberately taught was the structure of it, including headings, bulleted lists, questions, and objectives, in addition to text size, color, and font as a means of communicating more than just what the words themselves state.

Different text types are sometimes explored in a more fractured way, as in the case of the literature course. The English teacher's activity log included an explanatory essay, an autobiography, and a memoir. The teacher varied instruction based on the type of text and sometimes needed to express this bluntly to students, "We don't want this to read like a biography," was provided as part of the instructions on the presentations that students were creating about Ernest Hemingway. "We want the human-interest side of this, not a research paper." Thus, being fluent in the characteristics of text types was part of the creation culture rather than merely a feature of consumption in this course. When the teacher discussed the different text types, it became apparent that being able to distinguish these from each other was a skill addressed in this class,

I would say that sprinkled into each unit were two to three informational text pieces among eight to ten literature pieces, but I like having that variety because not every student is a literature student. We view art, we watch newscasts, we do podcasts with each other, we view slideshows together. The anchor text of literature is often a college-level piece, but we read blogs, short stories, op-eds [features opposite a newspaper's editorial page], and sometimes primary documents.

Exposing students to so many different types of texts is a manifestation of leading students toward valuable understandings because future reading demands on these students, whether they are acting as citizens, scholars, or employees at the time, may incorporate any or all of these types of texts.

It is apparent that one of the issues related to text type is how a textbook functions within a course. The vocational teacher expressed a sentiment that was apparent in actions of all four of these teachers, “I use my textbooks mainly as a resource rather than as a regular part of my classroom instruction...rather than them [the students] reading and answering questions [from the textbook].” In elaborating on why this is the case, the teacher stated,

I’m just trying to encourage them that there is not just one place to find information...I try to create a classroom environment where we acquire information in a variety of ways...so that they get more of a hands-on approach to the concepts of problems that we are talking about.

The authenticity attained in examining resources is perceived as one of the ways that teachers ensure that students find relevance, apply ideas, and recognize the purpose inherent in activities that involve the process of reading informational text.

This concludes the descriptions of themes relating to how teachers design instruction to promote student comprehension of informational text. In the next chapter, the secondary questions of the study will be examined. Additionally, potential implications for practice and recommendations for future research will be discussed.

CHAPTER V

Discussion and Recommendations

Analyzing the data collected in the four teachers' lesson logs, class observations, and interviews of the teachers conducted before and after the observations occurred, has led to understandings about ways that teachers promote student comprehension of informational text. In this chapter, implications of this study will be shared. Each of the themes that arose during data analysis shaped the implications. Those will be communicated after revisiting the secondary questions of the study. The secondary questions examined the timing of strategies teachers use, how teachers in different content areas approached instruction that would improve their students' skills, and how the teachers created a culture supporting student comprehension of informational text. Finally, the limitations of this study and directions for future research will be discussed.

The purpose of this study was to analyze what secondary teachers do to help students comprehend informational text in their content-area classes. The four content areas examined in this qualitative phenomenological research were English, Science, Social Studies, and Vocational courses. Three different aspects of data collection occurred during the 2016-17 school year. The first way data was acquired was through interviews with each of the teachers; one of these happened at the beginning of the study and the other at the end of the study. Observations of lessons provided a second means of gathering data. Each teacher was observed twice. The third medium was that teachers

kept an activity log throughout the school year so that lessons not directly observed could also be included in gathering a portrait of their instructional practices.

Secondary Questions

This study sought to learn more about how teachers perceived the effectiveness of activities conducted before, during, and after reading. Additionally, the process probed to discover more about strategies used to promote student comprehension of informational text, approaches in the four different curricular areas, and the cultivation of a classroom environment that invites students to experience informational text both as an individual and as part of a classroom community. One of the fundamental realities of reading instruction that is noticeable when appraising these secondary questions is that teachers are generally gauging the arena that encompasses these reading processes. That arena is comprised of the students, the text, and the content. In order to precipitate the best interaction among these, the teacher assesses what is needed to align these elements with each other.

Effectiveness of strategies used before, during, and after reading. The teachers in this study vacillated in their responses about which of these types of strategies maximized their students' abilities to comprehend informational text. Conditions factored into the teachers' responses about which kinds of strategies were most effective. Even when a response leaned toward one of these types of strategies, a later statement within the same interview would offer an assessment of how important the work at one of the other stages was.

The themes emanating from the data mirrored the series of actions associated with before, during, and after reading. Teachers making text accessible is generally part of the “before” process, creating conditions that celebrate and support the learning process would be primarily in the “during” phase, and facilitating activities that lead students toward valuable understandings functions most in the “after” stage of reading. These practices are not exclusive to these times within the reading process, but they align best as these episodes arrive.

A metaphor to represent these processes as they relate to reading would be a road trip. Prior to journeying, a traveler would want to know where they are going, what kind of topography they might experience, what the roads are like, and how to make certain that the vehicle was properly maintained and equipped for the trip. In order for students to be ready for the text, in this analogy, they need to feel motivated, capable, and prepared to travel. In the “during” stage, the traveler might need to be directed to what the specific sites to visit are - what can be gleaned from these and how much time should be dedicated to each one. On a road trip, some priorities might be determined before the trip, but being at a particular location might provoke more interest than originally thought. Likewise, a teacher may be targeting some aspects of a text upon beginning it, and students may uncover other items within that text that are ponderous. Upon returning from a road trip, a person might curate photographs for an album, collage, or presentation as a way to reflect on what the journey represented. This might also be a point at which other people inquire about the trip, and the traveler is expected to summarize what it was like. “After” reading a text, students organize what they have learned so that they can

understand themselves or the content in a deeper way. Thus, in this analogy, the teacher has served roles similar to a travel agent, map, mechanic, and film developer.

Some thoughts from the teacher interviews accentuate the relationship among the “before, during, and after” aspects of text instruction. The English teacher in this study connected them in this way, “...*After* is when we cycle back to the purpose and the context - why did we read it, how did it fit in, did it make you think of anything else coming up in your life or your world?” The strategies are not exclusive of each other, and if an issue related to word meaning arises during the reflective process, it is likely to be reconciled by a teacher or student. Ultimately, student performance tends to be measured by what they can do with a text in the “after” phase, and the other phases pave the way for this. As the vocational teacher expressed, “...If they [students] can’t produce something based on the reading, then it seems like it wasn’t worth reading it.” Devising a way to guide students to effectuate a series of conclusions, opinions, or other representations of their comprehension may be the goal of work related to a text, but it tends to be accompanied by steps prior to and during the reading of the text as well.

How teachers in different curricular areas vary their instruction to meet student needs. This study examined how teachers in English, science, social studies, and vocational courses executed instructional actions to support students in their understanding of informational text. Each subject-area teacher noted nuances related to words in the texts they explored in their classes. The social studies teacher mentioned words that have different meanings depending on the arm of that discipline, the science teacher emphasized the prominence of Latin words and word roots in that realm, the

vocational teacher mentioned specificity of laboratory procedures as well as legal underpinnings as challenges, and the English teacher noted that students in that content-area need to be aware of subtle differences between informational text and the more abstract texts of the literary world. When teachers talked about what they emphasized as outcomes, the intricacies of each particular course become more prevalent.

English. In the English class, a driving force for the lessons was an essential question that spanned the unit. This essential question fostered learning in the context of students' lives and experiences. A singular answer was not the goal, but it was instead a way for students to apply critical thinking to activities, which included reading, as a means of discovering more about oneself or to draw conclusions on a more global level. Anchoring these suppositions in various texts meant that the academic findings fed into how citizens and thinkers experience events and interactions that occur as part of life.

Science. The essence of reading in science empowered students to be able to engage in actions like those demanded of scientists. Texts in this course help students become engrossed in a topic, see how something applies, or study scientists' work. This enables them to duplicate methods or results, investigate, or better understand the findings ascertained through an experiment or series of discovered. Among the processes emphasized in this course were those that asked students to share their ideas and obtain feedback from others about them.

Social Studies. A piece of informational text in the social studies class was typically like an ingredient in a recipe. It rarely stood alone, but instead was used by

students to accomplish, evaluate, or solve something else. Among the skills that the social studies teacher stressed was being able to look at issues from different perspectives. As a result of honing these skills, a social studies reader exits a course closer to being an informed citizen, albeit recognizing that this is a dynamic set of characteristics over the course of a lifetime.

Vocational. The vocational reading experiences exhibited procedural aspects like science, purpose-driven work like English, and legal applications as found in social studies. The teacher in this course exercised students' abilities to evaluate the validity of resources and perspectives of stakeholders. These courses differed from the others in this study because they were in the elective strand of the high school experience. For a student who chose to take one of these classes, reading may have been an unexpected experience, but it might actually promote a higher reading performance for a student more interested in the topics within these courses than in one from the required academic track.

Each discipline provided reading opportunities for students designed to be commensurate with thinking and tasks authentic to the field. However, the teachers also exhibited some commonalities. Using text-based evidence to try to reach and prove a conclusion or stance was a common thread in these processes. In order to bolster students' abilities in doing this, especially as a participant within a classroom with other peers, the teachers tended to some environmental factors that nurtured open academic conversations.

Classroom environment. After the first series of observations and interviews, it was apparent that a collaborative learning environment had been crafted by each of these teachers. Conversations between students as well as those between the teacher and students suggested that the class philosophy was one of supporting each other in their learning. Even when a teacher asked questions of the students while standing in front of the class, in what might be considered a traditional stance of direct instruction, the outcome of the exchanges stoked student curiosity rather than providing a series of correct answers or gauging student understanding. Gathering information about student understanding level was done by other means, but the brief whole-class instruction or lecture phases were used to launch students into another stage of learning.

A disposition that these teachers conveyed was one of being a co-learner with the students as opposed to an expert. Through word choices that communicated public wondering along with the students, these teachers conveyed a spirit of inquisitiveness and modeled that learning is an ongoing process. Selecting words like *let's*, *we*, and *us* rather than *you* in stating transitional phrases or directions expressed this. Whether the teacher held a high range of expertise in the topic being examined or not, they led students to believe that they were looking at it with fresh eyes and engaging in the topic as a learner. It was as though they had guided students to a platform awaiting new discoveries and then suspended their own knowledge on a topic so that the students could experience revelations.

Implications Arising from the Themes

Making text accessible. When the four teachers were figuring out how to make informational text accessible, they were looking for compatibility between the text and their students. The teachers applied diagnostic techniques as they took inventory of students' skills and interests. Although this may have resonated merely from this study, formalizing these processes appears to be an advisable practice for other secondary content teachers. Related to this is the act of bridging any gaps that exist between the text and students. Examples of this include providing context that builds student background knowledge on a topic, stoking student curiosity about a topic, and providing assistance with the words and phrases that may pose obstacles in the text.

Creating conditions that celebrate and support the learning process. These teachers exhibited an undergirding of a learning philosophy that sees the learner as a co-constructor of knowledge and outcomes. While moments of teacher-centered guidance shaped the lessons that were observed in this study, the students were entrusted with collaborative learning practices in which they would discuss readings and work together to build their understanding. Since many of these conversations occurred simultaneously and without direct teacher involvement, the teacher had released some of the control and responsibility to the students. Cooperative learning strategies had been taught and practiced in order to be able to use them as a means of honing student growth. The study suggests that teachers who want to help students in this manner allow them to own the learning and interact with their peers as they uncover the meaning of informational text.

Facilitating activities that lead students toward valuable understandings. The third theme of this research offered insight about how students perceive their work. As students engage in productive activities related to informational text, this study suggests that they should feel like the work is worth doing. When the students exit the classroom, they would then feel more equipped to tackle informational text outside the classroom and related to a particular content area. As their skills grow, the potential exists for the text type to be more broad as well as opposed to a narrow and predictable scope that might be present in a classroom environment. Beyond simply understanding a text, the teachers in this study helped students recognize that their growing reading abilities could support applications that would persuade problem-solving actions in genuine content-area situations. Additionally, teachers are likely to develop their students' skills when the students sense that the work is significant to them as individuals as well.

Alignment. As previously mentioned, the arena is comprised by the students, the text, and the content. The teacher oversees the interactions among these elements. In the *before* phase, a teacher helps students feel capable of and interested in reading the text. Motivation to proceed has been stoked. In the *during* stage, a teacher provides students with tools that help them invest in the meaning of the text. These actions help a student comprehend the text while also remaining focused on the process of reading it. In the *after* phase, a student is able to reflect on the informational text. It is likely that a teacher who is effective at these processes grasps who the students are in terms of their existing skills and interests, what the text is like and how it can be used to advance

understanding in the content area, and what the content area demands from people who regularly participate in it.

Limitations and Future Research

This study occurred over the period of one school year and examined four teachers in a single rural high school in Minnesota. The results may not be generalizable across classrooms and schools elsewhere. The teachers in this study have been attending to their practices related to informational text with their students through various means of professional support. Examining these teachers and their practices assumed a degree of success that their students were experiencing while using informational text in their content-area classes. A measurement did not validate that the students grew in their ability to apply informational text in the content areas.

Based on the processes and findings of this study, future research examining other secondary content areas would be beneficial. This study only examined what might comprise one-half of the general content areas of a high school. Including mathematics and music in future research would be helpful. A quantitative study that measured student comprehension of informational text before and after a content-area course in which intensive skill work such as that observed would be another way to expand on this study's findings. This could be further subdivided to determine which strategies and dispositions students are using most frequently and finding most useful.

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APPENDIX A

Letter to Principal

Dear [Principal] XXX:

As part of my doctoral candidacy work in Educational Leadership at Minnesota State University, Mankato, I am writing a dissertation. My plan is to conduct research relating to how instructional practices affect student literacy with informational text in various content areas at the secondary level. I am aware that XXX [your school] has actively trained its faculty in literacy practices and implemented Common Core State Standards in its curriculum. I would appreciate the privilege of examining how teachers engage their students in this type of work in your building.

The study will be phenomenological qualitative research; thus, I am using purposive sampling and would like for you to recommend one participant from each of the following four content areas: English and Language Arts, Health or Science, Social Studies, and Vocational. Please refrain from sharing the potential candidates for this with me or the teachers you would recommend for the time being. Before the participant list can be formalized, I need to complete additional approval steps.

The study will consist of two in-class observations with post-observation conferences, compiling a log of literacy activities executed in class throughout two quarters, and brief interview experiences built from my sub-questions. Participants will be able to review my interpretations of their words and activities through a member checking process. In addition, no student or participant names will be used in the study. Your school will be identified by basic geographic descriptors. Pending approval from my dissertation committee and the Institutional Review Board (IRB), I will conduct this study during the 2016-17 school year. Once I secure IRB approval, I will send my proposal to you. At that point, I will need a letter from you on your school's letterhead verifying your approval and permission to conduct this research.

If you would like further details on these processes or anything else related to my research, please let me know. Otherwise, please email me at pstrukel@gmail.com to confirm that I may proceed with my plans to use your school as a setting for this study. Thank you for your consideration.

Sincerely,

Patti Strukel

APPENDIX B

Email to Participants

My name is Patti Strukel. I am writing a dissertation as part of my doctoral candidacy work in Educational Leadership at Minnesota State University, Mankato. My plan is to conduct research relating to how instructional practices affect student literacy with informational text in various content areas at the secondary level. Your name was provided to me by XXX [your principal] because you have been identified as a teacher who effectively designs instruction to improve student comprehension of informational text in your classes. Three of your colleagues have been invited to participate in this as well, but meetings, interviews, and observations will be conducted on an individual basis.

The study will consist of two in-class observations with post-observation conferences, compiling a log of literacy activities executed in class throughout two quarters, and brief interview experiences built from my sub-questions. You will be able to review my interpretations of your words and activities through a member checking process. In doing this, you will have the opportunity to ensure that your words and actions are not misrepresented in this study. I am seeking to understand instructional practices better and hypothesize patterns based on your words and actions. By member checking, you will help ensure that this research meets its intention and does not make you feel uncomfortable about your instructional practices. In addition, no student or participant names will be used in the study; a geographic description of the school district will be the only means of identifying the site of the study. The study will occur during the 2016-17 school year.

Expect that I will call you within the next week to ask if you are willing to participate. I believe that the act of reflecting upon your classroom practices will benefit you as a professional. Please take a moment to review the consent form attached. Upon your verbal acceptance to participate in this study, I will ask you to sign this; then, we will arrange details of the initial interview and first in-class observation.

APPENDIX C

Consent Form

My name is Patti Strukel. As part of pursuing a doctoral degree in Educational Leadership from Minnesota State University, Mankato, I am seeking your participation in a study. I am conducting research to find out how instructional practices affect student literacy with informational text in various content areas at the secondary level. You are one of four participants requested to be part of this study. Participation in this research will be for the duration of the 2016-17 school year.

The process will consist of two in-class observations lasting about 50 minutes each with post-observation conferences held after school for no more than 60 minutes. In addition, I will ask that you compile a log of literacy activities executed in class throughout two quarters. The other aspect is participating in two brief interview experiences of no longer than 45 minutes each (one before and one after the other elements of the research occur) built from my sub-questions. The questions are as follows:

1. *How do you design instruction to promote student comprehension of informational text?*
2. *How do activities conducted before, during, or after, the reading of informational text vary in their effectiveness?*
3. *Which strategies do you find most effective at promoting student comprehension?*

You will be able to review my interpretations of your words and activities through a member checking process. In doing this, you will have the opportunity to ensure that your words and actions are not misrepresented in this study. I am seeking to understand instructional practices better and hypothesize patterns based on your words and actions. By member checking, you will help ensure that this research meets its intention and does not make you feel uncomfortable about your instructional practices. The risks you will encounter as a participant in this study are no more than experienced in your everyday life. Your participation is entirely voluntary. You may withdraw from the study at any time by informing me by phone or in-person. Non-participation or discontinuing the study will not result in penalty or loss of benefits and will not affect your relationship with Minnesota State University, Mankato.

As part of this study, I will electronically gather audio recordings of the interviews as part of the data collection process. The recordings, my records, and thus your responses will remain confidential and secure. Consent forms will be stored in a locked location at MSU-Mankato. Documentation will be maintained for three (3) years after completion of data collection. At that time, the records related to this study will be destroyed by document erasure.

Transcription, or coding, of the data gathered will occur with some assistance from the chairperson of my dissertation committee. Thus, the only person other than me who will have access to the recordings or their interpretations will be my dissertation committee chairperson.

Initial: _____

In addition, no student or participant names will be used in the study; a general geographic description of the school district will be used to prevent identifying the site of the study. As a participant, you will be identified by subject area, but not by name. A possible benefit of participating in this study for you is increased awareness of your instructional practices relating to student comprehension of informational text, which may increase the effectiveness of your instruction. A possible benefit to society is that this work has the potential to expand current understanding about instructional design in this realm of secondary education. Numerous studies examine instructional practices working with informational text, but this specifically compares how these strategies are implemented across a range of content areas.

If you have any questions related to the research, you may contact me at (507) 236-0288 or patti.strukel@mnsu.edu or my committee chair, Dr. Julie Carlson, at Minnesota State University, at (507) 389-5441 or julie.carlson@mnsu.edu. If you have questions about your rights as a research participant, please contact Dr. Barry Ries, the IRB Administrator at (507) 389-1242 or barry.ries@mnsu.edu.

Enclosed is a copy of this form for you to keep. If you are willing to participate in this study, please initial the first page and sign below. Your signature indicates that you have read and understand the information above and willingly agree to participate.

Participant's printed legal name _____

Participant's signed legal name _____

Date _____

MSU IRBNet Log #: 946-096-1

Date of MSU IRB approval: September 13, 2016

APPENDIX D

Interview Questions

1. How do you design instruction to promote student comprehension of informational text?
2. How do activities conducted before, during, or after, the reading of informational text vary in their effectiveness?
3. Which strategies do you find most effective at promoting student comprehension?

APPENDIX E
Observation Form

Date:

Subject area:

| What I saw | What I heard |
|-------------------|---------------------|
| | |

