DEFINING DISCIPLINARY LITERACY AND IDENTIFYING THE SUPPORTS NEEDED
FOR IMPLEMENTATION: A MODIFIED DELPHI STUDY

A Dissertation

by

KELLI LESLY POWELL

BS, University of Texas, 1989
MS, Lamar University, 2008

Submitted in Partial Fulfillment of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

in

CURRICULUM AND INSTRUCTION

Texas A&M University-Corpus Christi
Corpus Christi, Texas

December 2019

DEFINING DISCIPLINARY LITERACY AND IDENTIFYING THE SUPPORTS NEEDED
FOR IMPLEMENTATION: A DELPHI STUDY

A Dissertation

by

KELLI POWELL

This dissertation meets the standards for scope and quality of
Texas A&M University-Corpus Christi and is hereby approved.

Dr. Bethanie Pletcher, Ed.D.   Dr. Kelli Bippert, Ph.D.
Chair   Committee Member

Dr. Daniel Pearce, Ph.D.   Dr. Dan Sipes, Ph.D.
Committee Member   Graduate Faculty Representative

December 2019

ABSTRACT

Since the early 1900s, researchers have studied secondary literacy practices. Content area reading strategies have been well documented and shown to be effective in improving students' comprehension of content materials. Despite this research, content teachers are still resistant to using these strategies as they are viewed as taking time away from teaching the content. Disciplinary literacy is a relatively new term in the field of literacy instruction and as a result, literacy experts vary in their beliefs about disciplinary literacy and its relation to content literacy. In a review of the literature of both content literacy and disciplinary literacy, the expertise of the teacher is critically important.

The purpose of this study was to understand how literacy experts define disciplinary literacy and its relationship to content literacy. Additionally, literacy experts were asked to identify significant works in the field of disciplinary literacy and what makes these works significant. Using a Delphi technique, participants were asked to respond to a series of open-ended questions, rate summarized responses, and provide a rationale for their ratings. This Delphi had three iterations and participants had the opportunity to respond to ratings and summary statements as well as to revise their responses. This Delphi study utilized a format to encourage a dialogue about the topic of disciplinary literacy and was not intended to continue iterations until there was an agreement on a disciplinary literacy definition. The intention was to identify elements that should be incorporated in a definition for disciplinary literacy and the instructional approaches that may align with a definition.

The Delphi technique is not guided by a theoretical framework; however, this study relied on a theoretical perspective. Moje's (2007) Disciplinary Literacy Theory and Fang's (2012a)

Approaches to Developing Content Literacies were not only used to guide this study but also used as *a priori* codes in this first level of analysis. To increase reliability of the findings, an interrater categorized the data using the same a priori codes. The researcher calculated the Cohen's kappa to measure the level of agreement. For each of the definition statements, the median rating was reported, and rationale statements were used to explain the ratings. For the final analysis, rationale statements were coded using process coding and themes were developed. After the second iteration, it became evident that participants were not interested in identifying significant works as they preferred not to respond, provided incomplete responses, or did not follow instructions. The researcher abandoned this portion of the study.

The median ratings and an analysis of the rationale statements highlighted that any definition for disciplinary literacy needs to be teacher-friendly, honor the epistemological processes of a discipline, and not abandon the use of cognitive strategies that support comprehension. The findings of the study emphasized the importance of the role of the teacher in the secondary content area setting. Content teachers need to have an understanding about the literacies of their discipline, which includes its beliefs, language, and discourses. In order to develop this level of teacher expertise, pre-service preparation programs and ongoing professional learning for in-service teachers need to be designed to foster those skills and abilities. Literacy experts, teachers, and those who work in the discipline need to collaborate to explicitly define a discipline's discourses and how students can show their understanding of content information.

DEDICATION

This dissertation is dedicated to my family. Thank you, mom and dad, for always believing in me and leading a life that exemplifies faith and perseverance. I cannot thank my children and my husband enough. You have encouraged me, inspired me, and believed in me since the beginning of this journey. Thank you for your unwavering love and support.

Thank you to all my colleagues, past and present. You inspire me every day to become a better educator. I cannot thank the teachers I work with enough for all you do, for inviting me into your classrooms, for trusting me, and for allowing me to share your journey.

ACKNOWLEDGEMENTS

I am grateful to my dissertation committee – Dr. Bethanie Pletcher, Dr. Kelli Bippert, Dr. Dan Pearce, and Dr. Dan Sipes. I want to especially thank my committee chair, Dr. Bethanie Pletcher, who was the most patient and supportive committee chair that anyone could hope for. Thank you for getting me to the finish line.

I would be remiss if I did not acknowledge the professors who inspired and challenged me along the way – Dr. Bryant Griffith, Dr. Dan Pearce, Dr. Nancy Smith, Dr. Corinne Valadez, Dr. Bethanie Pletcher, Dr. Chase Young, and Dr. Sherrye Garrett. Thank you for opening my mind to a world of possibilities.

There is a former educator out there whose remarks about teaching his content started me on this journey. While his comments were disappointing to hear, it spurred me forward to prove him wrong, thus an idea for a dissertation was born. Thank you for making me a better educator and administrator.

The doctoral journey is difficult, challenging, and emotional. Without my support group, I know I would not have finished. Thank you, Julie, Cindy, and Carl. Every time I wanted to give up, you would text, email, or call and that gave me just enough encouragement to keep going. Our CoP group rocks!

Thank you to my best friends Bonnie and Linda. You have supported me and kept me centered for over twenty years. You bring out the best in me. All my love to both of you.

Stephen, Lesly, Hattie, and Berkey, thank you for your patience and understanding. I know it was hard when I disappeared for periods of time to study, to write, and to attend classes;

or worse, when I was grouchy and frustrated. I appreciate the opportunity you afforded me. I love you more than you know.

Finally, I am grateful for the many blessings God has bestowed on me and my family. He has guided me and placed people in my path at just the right time, with just the right things to say. All of which have led me to this moment. Without Him, none of this would be possible.

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

CHAPTER I: INTRODUCTION

Overview

Secondary reading instruction has been examined in many contexts in order to improve students' understanding of the content in each of the disciplines. Researchers have considered aspects of content reading instruction that included memorization, oral reading, silent reading, vocabulary development, cognitive strategies, and visual aids. For the last 100 years, researchers have speculated on the factors and approaches that affect students' understanding of text.

Initial research in this area acknowledged the differences in the various content areas and the need for intentional instruction to address those differences (Gray, 1933). In *The Teaching of Reading: A Second Report*, Gray "advocated for an intelligent attack on reading problems that arise in the content fields" (Whipple, Gray, & National Society for the Study of Education, 1937, p. 20). Further, he described every teacher "as a teacher of reading" (p. 19). From this discussion of secondary reading, the phrase "every teacher is a reading teacher" was coined. Gray was making a case for all teachers to recognize that it is the teacher that makes curricular and instructional decisions regarding their content; therefore, it is the teacher's responsibility to teach students how to interact with those texts. Herber (1978) disagreed with the notion of every teacher a reading teacher and posited the use of cognitive strategies selected by the content teacher as the content specialist would increase a student's understanding of the content material. Bean (2000) explained that there has been a change in this focus of strategies-based research which he contributes to social constructivism. The social constructivist theory as explained by Bean focuses on the social context of the classroom and how meaning is constructed as teachers and students interact with each other, texts, and media.

Despite the ongoing discussion in how to engage content teachers in teaching the literacies of their discipline, content teachers have remained unreceptive (Fisher & Ivey, 2012; Lent, 2009; O'Brien, Stewart, & Moje, 1995; Robinson, 1975). Even with preservice programs offering and even requiring content area reading courses, researchers have discovered the reading strategies taught in many of the content area reading teacher preparation courses were not being utilized by content teachers (O'Brien, et al., 1995). Content teachers reported that they did not consider themselves reading teachers and therefore did not use reading strategy instruction routinely as a part of their instructional practices (Manzo, Manzo, and Thomas, 2009). Research of the 1980s used quasi-experimental methodology to validate content literacy strategies while the research of the 1990s looked to qualitative methods to discover the impact of teacher-student interaction in the classroom setting on literacy instruction and student learning (Bean, 2000).

Researchers then began to explore what practices were utilized in teaching the literacy of a discipline. In doing so, they noted that each discipline focused their instructional practices in specific ways which included the discourse of the discipline, how content texts are structured, how to read content texts, how students produce their understanding of the content, and the space needed to explore the discipline (Moje, 2008; Shanahan & Shanahan, 2008). Fang and Schleppergrell (2010) reported on the complexities of texts used in the secondary setting and the demands these texts place on readers. Referring to the works of other literacy leaders, Fang and Schleppergrell shared that reading strategies often used in elementary reading are not adequate to meet the needs of readers in the secondary content classrooms.

An examination of the literature found that content area reading instruction has been an ongoing discussion since the early 1900s. The common factor that determines success

2

throughout the literature is the teacher. Yet, there remains a disconnect between the research and practitioner. It has been noted that the current discussion of disciplinary literacy may be in opposition to previously reported research on content reading creating an either/or dichotomy that may not be beneficial to student learning (Brozo, Moorman, Meyer, & Stewart, 2013; Dunkerly-Bean & Bean, 2016).

Factors Influencing Content Reading

Venezky (1987) explained that societal needs were the determinant in text selections for early readers. For example, early reading materials used Biblical selections with a heavy emphasis on oral reading memorization since society's goal was to foster a student's understanding of the Bible and spiritual growth (Smith, 2002). As societal needs would continue to impact how reading texts were published, instructional practices were developed and modified to meet those needs. Content area reading was added as an area of instruction when oral reading and elocution were less emphasized instructional practices. Still, according to Venezky (1987), early research literature highlighted phonics and vocabulary instruction and not comprehension. This emphasis guided the development of teacher professional development and resource materials; therefore, instructional practices designed for the understanding of content reading were not fully explored. As silent reading became the dominant form of reading in school, replacing oral reading, researchers considered how students would process information encountered in the content areas. Due consideration was given to the selection of texts, amount of time allotted for reading, and even the types of reading experiences designed for students.

While some early readers contained science and social studies selections, it was not until the 1920s that reading non-fiction selections was recognized as a needed area of instruction. Research indicated that adults were unable to successfully read material encountered in daily life

(Whipple, 1925). Venezky (1987) concluded that content area reading instruction was the result of too much emphasis on narrative reading instruction, highlighting the need for direct instruction in study skills and content-area reading. Smith (2002) noted that research in the early part of the 20th century supported silent reading as the primary form of reading as it reflected the attitudes of everyday reading. In a review of the literature from the time period, Smith reported that communication of ideas was primarily written; therefore, silent reading was the recommended form of instruction. "Work type" reading, reading texts that are job related or civic related, was recognized as an important form of reading (Whipple, 1925, p. 5). While this relates to the types of reading that adults typically engage in, Whipple noted that it is no different than students reading content related texts, such as history, math, or science.

While shifts were occurring in reading instruction, the structure of the school system was also changing. Students attending schools were provided with more curriculum choices beyond the instruction of reading and basic math skills (Whipple, 1925). This shift in structure reflected the views of society to create an educated citizenry who have an understanding of the world in which they live as well as to create workforce ready individuals. These societal shifts prompted more research in reading instruction to address these instructional needs.

In the *Twenty-fourth Yearbook of the National Society for the Study of Education, Part II* (1925), due consideration was given to reading instruction in content areas. Studies conducted revealed that adequate readers had difficulties reading content related materials. Based on this information, it was surmised that "each subject, in addition to the general habits employed in reading, requires specific skills peculiar to its purpose and subject matter" (p. 97). Early commentary on content reading noted differences in the disciplines and advised that reading in the content area was a combination of general reading skills, e.g. finding the main idea, and an

understanding of the nature of the discipline. The instructional recommendations reflected those differences. To illustrate, Whipple gave examples of lessons for geography, arithmetic, and technical arts. Ultimately, these recommendations relied on the teacher's understanding of the nature of the discipline as well as the ability to select reading materials and to deliver appropriately designed lessons.

Following the second World War, research was conducted on secondary and college level reading when tests revealed that adults could not easily read everyday materials (Smith, 2002). As a result, more attention was given to the development of formal reading programs at the secondary and collegiate level. *The Forty-seventh Yearbook of the National Society for the Study of Education: Part II-Reading in the High School and College* (1948) devoted a chapter to the discussion of reading in the content areas. In the chapter discussing content area reading, Leary discusses the various issues with reading content material in literature, math, science, and social studies. While content areas have some aspects of reading in common (e.g. specialized vocabulary.) Leary delineated other aspects that were unique to each of these contents. This included literacy practices specific to content areas. Leary made the point that it was the teacher who needed to be knowledgeable about the literacies of their content in order to provide instruction that leads to student achievement.

Strang, McCullough & Traxler (1967) recognized that each discipline has specific instructional needs in order for students to understand the content information and show their understanding. In his analysis of the reading activities used in three middle level content classes, McCallister (1930b) reported that each of the content areas observed, social studies, math, and science, had specific reading expectations placed on the students. Referring to these as "reading activities," McCallister explained that teachers would need to have a clear understanding of why

and how readers in a content area interact with texts. McCallister (1930a) remarked that teachers did not receive the necessary preparation in their reading instruction courses. Strang (1966) discussed the importance of explicit teaching practices that cultivated reading skills within each discipline. She noted that each discipline had specific vocabulary and reading skills, e.g. social studies and point of view, that would require direct instruction. Strang explained that there are certain reading skills that are necessary to understand all reading materials and that these are introduced to students in the early grades and as they develop as readers. Additionally, Strang (1966) noted skills specific to social studies, math, science, and literature. Content reading textbooks devoted chapters on how to teach reading in the content areas.

A shift in secondary reading occurred with Herber's (1978) work, *Teaching Reading in the Content Areas*, where he proposed that it was not necessary to develop skills for specific disciplines as the content teacher could use general study skills in order for students to understand the content. Herber (1978) explained that content teachers did not need to teach students how to read their specific content texts, instead the teacher, using general study skills, could make the text accessible to the student. The teacher, using their knowledge of the content and content text, would select and teach the reading strategies needed to understand the content. Further, Herber delineated the roles of a reading teacher and content teacher. He explained the role of the reading teacher was to teach students how to read while the content teacher was responsible for teaching students how to access content through content specific texts. In doing so, secondary reading moved beyond the idea that every teacher is a reading teacher. Herber's work and that of his doctoral students would guide the curriculum of teacher preparation programs and professional learning.

The field of secondary literacy instruction has shifted in recent years to answer the call for discipline specific instructional practices. With the shift to Common Core State Standards and the purposeful alignment of curriculum to prepare students to be college and career ready, literacy practitioners and researchers have considered how literacy instruction is provided in different disciplines. Common Core State Standards outlined specific literacies for the disciplines – English, history/social studies, mathematics, science, and technical subjects (National Governors Association, 2010). This new development led literacy experts and teachers to consider how reading and writing instruction is provided and how students demonstrate their understanding within a discipline. The introduction of disciplinary literacy to the discussion of secondary reading instruction coincided with the development of the Common Core State Standards and a growing body of research that was showing signs that content area reading instruction was not being used by content teachers.

Depending on the researcher's stance regarding secondary literacy, a variety of definitions for disciplinary literacy can be found in the literature (Moje, 2007). According to Shanahan and Shanahan (2008), disciplinary literacy is "an emphasis on the knowledge and abilities possessed by those who create, communicate, and use knowledge within the disciplines" (p. 8). Fang (2012b) defines disciplinary literacy as the "development of students' 'ability to engage in social, semiotic, and cognitive practices' consistent with those used by content experts" (p. 19). The International Literacy Association (2015) defines disciplinary literacy as the skills that are specialized to content areas and a student's ability to apply reading and writing in order to meet the literacy demands of each of the disciplines. To further highlight the differences in what constitutes disciplinary literacy are the number of studies completed within each of the disciplines where differences in the disciplines are further delineated (Moje, 2007).

Statement of the Problem

Content area reading research had been discussed in the literature for almost 100 years. Despite the body of research that supports the success of strategies based on this research, content teachers have not embraced their use (Alvermann & Moore, 1991). The movement to a disciplinary literacy approach has resulted in skepticism and concern within the literacy community (Brozo, Moorman, Meyer, & Stewart, 2013). Brozo, Moorman, Meyer, and Stewart discussed the importance of examining the philosophies of content area literacy and disciplinary literacy. These same authors called for a blended approach of instruction that combines the generic practices of content area literacy and literacy practices of a discipline. Brozo, Moorman, Meyer, and Stewart (2013) explained that students who are not interested in a specialized field may not benefit from discipline-specific instructional practices. A blended approach allows literacy specialists and content teachers to create instructional practices that employ aspects of both content literacy and disciplinary literacy.

Dunkerly-Bean and Bean (2016) examined the stances of researchers in content area literacy and disciplinary literacy. They considered the discursive networks of each area. A primary concern expressed by Dunkerly-Bean and Bean was that disciplinary literacy is rooted in content literacy literature and research, making it challenging to consistently review the literature for disciplinary literacy. Dunkerly-Bean and Bean noted how researchers in disciplinary literacy used graphic organizers, for example, and determined that they were taking graphic organizers researched in the field of content area literacy and modifying them to be used for a specific purpose in a content area. In their review of the literature, Dunkerly-Bean and Bean explained that work in the field of disciplinary literacy may be creating an "either/or" environment that

may impede practitioners. Moje (2007) identified four categories that reflected researchers'

beliefs about disciplinary literacy, thus illustrating potential divisions in the field of literacy.

Significance of the Study

The term "disciplinary literacy" is relatively new in the literature and its definition can

vary based on the stance of the researcher. This study sought to understand how literacy experts

perceive disciplinary literacy in relation to content literacy. As previously discussed, content

teachers do not routinely use the instructional practices learned in content reading courses

despite the large body of research that suggests such strategies are successful.

One goal of this study was to examine literacy experts' perceptions of disciplinary

literacy. It is the shared understanding of literacy practices that guide the development of

instructional strategies. A second goal of this study was to document which works are considered

significant in the field of disciplinary literacy and what attributes make them significant. It is

these significant works, sometimes referred to as seminal works, that anchor instructional

practices. In order for content area teachers to fully embrace their role in explicitly teaching

students the literacies of their disciplines, targeted coursework and professional development

needs to occur.

Using the Delphi method, this study attempted to fill the gap in the literature concerning

the understanding of disciplinary literacy among literacy experts and add to the body of research

with the identification of significant works as recommended by experts in the field of secondary

literacy.

Theoretical Perspective

The Delphi Method

The use of the Delphi method is based on a system of inquiry that reflects the researcher's purpose. The Inquiring System (IS) is the philosophical basis for which the Delphi method is used or applied (Mitroff & Turoff, 1975). Mitroff and Turoff posited there are five possible systems that can used as a basis for Delphi method design: Lockean, Leibnizian, Kantian, Hegelian, and Singerian. Early Delphi studies were based on a Lockean IS which allows for the building of data through consensus building. Leibnizian IS reduces data to a mathematical or symbolic representation resulting in a solution. The Kantian IS combines Lockean and Leibnizian attributes that result in various viewpoints of a problem or issue. The Kantian IS recognizes there is not one solution, but many possibilities that should be considered. The Singerian IS is interdisciplinary in nature, combining elements of Lockean, Leibnizian, Kantian, and Hegelian systems to include input from "different disciplines, professions, and types of personalities" in the development of knowledge (p. 33). Mitroff and Turoff explained that the Singerian would also have an impact on the experts in terms of expanding their knowledge throughout the process.

For this study, the researcher used a Hegelian, or Dialectical, IS. The Dialectical IS seeks to draw out the conflict regarding the topic of study. In exploring the conflict, the researcher can explore various points of view to clarify thinking on the topic of study, in this case disciplinary literacy. The Dialectical IS does not necessarily lead to a new agreement; however, using the Dialectical IS, the researcher can synthesize expert knowledge to expose gaps for further development.

Disciplinary Literacy Theory

This study was based on the exploration of disciplinary literacy theory. Moje (2007) suggested that there are four categories of instruction that comprise disciplinary literacy theory. Moje discussed four categories of disciplinary literacy instruction based on her review of the literature, each of which reflects a researcher's position regarding disciplinary literacy. The first category, cognitive processes, is characterized by the use of strategy instruction to access content. This category reflects the efforts of Herber and other researchers to cultivate students' study skills by applying cognitive strategies, so they are reading to learn. Another category, the study of literacy through the lens of an epistemological process, examines the thought processes of members of a specific discipline, considering how disciplines compare to one another, and how these apply to the educational setting. Moje defined the linguistic processes of a discipline as the examination of how a discipline's language is constructed and written or discussed. A final category Moje discussed is one where researchers consider the culture of the classroom and how teachers communicate the practices of the discipline and how teachers provide "space for young people's everyday knowledge to be used to inform and expand mainstream academic knowledge" (p. 75). The practitioner's belief about literacy instruction influences the selection of instructional practices.

Fang's discussion of approaches to literacy instruction adds further insight as to how teachers provide literacy instruction (Fang, 2012a). Similar to Moje's reporting of literacy beliefs, he noted four approaches to instruction: cognitive, sociocultural, linguistic, and critical. The cognitive approach involves the use of cognitive strategies (e.g. summarizing, to promote comprehension.) This approach has a strong research base; however, according to Fang, there is still criticism about how the strategies are used by teachers. Teachers who use a sociocultural approach acknowledge students' background knowledge and cultural practices as part of their

11

instructional practice. A criticism of this approach is its attempt to blend academic and everyday language in order to honor the knowledge students bring to the learning environment. Fang (2012b) noted that each of the disciplines has its own discourse; to ignore the academic language may create a "hidden curriculum," where the student is denied the opportunity to learn the content because of an 'academic language deficit' (Fang, 2012a, p. 107). The linguistic approach is the use of instructional practices that focus on syntax, vocabulary, and text structures. In a review of the literature, Fang reported that there are mixed reviews on this approach. This approach requires a teacher to have knowledge of language. Fang explained the final approach, the critical approach, in which the teacher considers the text in relation to the author's values. The author's position can influence the reader; therefore, the teacher provides texts that have alternate and even opposing views. Fang proposed a synergistic approach to content literacy instruction where the teacher utilized instructional approaches from all four previously discussed.

Moje (2015) posited a similar idea with her development of a 4-E heuristic that includes aspects of four beliefs about disciplinary literacy. Moje explained that this approach seeks to honor the culture of a discipline where students are apprentices in their disciplinary literacy learning in lieu of learning a series of skills for comprehension. To that end, Moje developed a framework of instruction that is underpinned with inquiry and discourse. This framework considers all aspects of disciplinary learning and aligns with other researchers' position that content literacy instruction of the previous decades should not be abandoned or positioned in opposition to disciplinary literacy (Dunkerly-Bean, & Bean, 2016).

Research Questions

This study is guided by the following research questions:

1.	How do experts in the field of content area reading instruction define disciplinary

literacy and describe it in relation to content area literacy?

2.	What significant works in disciplinary literacy are noted by experts in the field of

content area reading instruction and why are they noted as significant?

3.	What commonalities emerge in the rationale provided by participants when

identifying significant works for disciplinary literacy?

The Lens of the Researcher

When serving as the Administrator for Academics and Accountability at a South Texas

high school, I worked with teachers in all content areas. As a former English and reading teacher,

I understood literacy practices. During a data discussion with a group of science teachers, we

discussed what we believed were some of the difficulties students were facing on the testing

instrument. We noted that vocabulary was a barrier. When I inquired what practices were being

used to address vocabulary instruction, one teacher said, "I am science teacher, it is the English

teacher's job to teach vocabulary." As both an undergraduate and graduate student, I took

content area reading courses with teachers representing K-12 and all content areas. I began to

wonder. If we all took these courses, why would these teachers feel so strongly that literacy was

not a necessary piece of their instructional practices?

As I pursued my doctoral degree, I researched the issues associated with teaching the

literacies in any given content area. My instructors challenged me to explore content literacy and

disciplinary literacy as some believed that disciplinary literacy was content literacy repackaged. I

began with looking at science literacy since it was a science teacher that originally challenged

my view. After reading Shanahan and Shanahan's publication (2008) in the *Harvard*

Educational Review, I realized reading instruction and content instruction were intersecting in a

different manner. Literacy experts were intentionally partnering with content practitioners to examine how and why reading instruction was delivered in a content area. I conducted this study to not only further my understanding of disciplinary literacy but add to the body of knowledge in secondary literacy and how we prepare content teachers.

CHAPTER II: REVIEW OF THE LITERATURE

This literature review is organized in four parts: a historical look at content area reading, development of disciplinary literacy, disciplinary literacy theory, and the use of the Delphi method in literacy studies. To locate peer reviewed articles and publications for this literature review, the following keywords were used as search terms: content reading, content literacy, disciplinary literacy, disciplinary literacy theory, Delphi method, Delphi method and educational research, qualitative study, reading instruction, literacy instruction, seminal works in reading instruction, and secondary reading.

A Historical Look at Content Area Reading

This section is a review of the literature on content area reading. Since the beginning of the 20th century, researchers have studied and discussed reading instruction in the content areas. Mraz, Rickelman, and Vacca (2009) stated, "The term content-area reading described reading and learning that occurred across the subject areas," and associated the term with reading textbooks (p. 85). Over the last 100 years, researchers have developed and examined instructional practices in content area reading and consistently reported on the effectiveness of targeted reading instruction to improve student achievement.

In *Historical Exploration of Content Area Reading Development*, Moore, Readence, and Rickelman (1983) defined content area reading instruction as an "attempt to enable students to cope with the special reading materials and tasks encountered during the study of school subjects" (p. 420). While their review of the literature did not specifically connect reading strategies with specific disciplines, Moore, Readence, and Rickelman described content area reading instruction as a means to "develop students' reading-to-learn strategies" in order to assist students in comprehending texts from different disciplines (p. 420). This historical investigation

examined the early era of content area reading instruction and its development as a result of three philosophical approaches to education that existed in the early 1900s. Each philosophy contributed to the development of content reading instruction that focused on creating knowledge using text, instruction that scaffolded students' understanding of content text, and research based instructional methods. While not specifically noted as discipline specific instruction, researchers reported on differences in reading across each of the disciplines from the early 1900s through the 1960s which included publishing instructional textbooks to guide teachers from the different content areas in teaching the process of reading discipline specific texts. Early content reading considered how content area reading instruction needed to reflect the reading demands of the content.

Robinson, Faraone, Hittleman, and Unruh (1990) explored the history of reading comprehension instruction. It was noted that prior to 1910, reading comprehension instruction reflected accepted ideas about reading and did not consider any difference between children and adult literacy. This was evident in the textbook publications. Authors of textbooks would note that their instructional methods were proven through field testing in classrooms but there was not educational research to support their claims. Robinson, Faraone, Hittleman, and Unruh (1990) discussed how Gray's research conducted in the early part of the 20th century on silent reading resulted in reading comprehension practices that are still reflected in contemporary instruction. Standardized tests were the instruments used to determine what instructional practices were effective. The authors explained that both times there was a surge in research during wartime in the early part of the 20th century when it was apparent soldiers had difficulty with reading. As educational research developed, researchers began to test hypotheses about reading comprehension instruction. Research conducted in the content areas tested the effects of study

16

skills, such as summarizing and outlining, and text structure, including syntax, to improve reading comprehension.

In the early stages of content reading reporting, researchers noted the need to read for different purposes. William Gray, a prominent figure in reading instruction, conducted numerous studies early in the 20th century to determine instructional practices that led to quality reading instruction. Gray (1927) found that reading instruction should offer opportunities for students to read for a variety of purposes. In order to provide those opportunities, Gray reported that teachers would need to have a strong understanding of content and pedagogy. In his annual summary of reading research reports, Gray made a point to include studies that focused on content area reading (Moore, et al., 1983). Gray (1933) explained that "reading problems in the content subjects receive increasing attention from year to year" (p. 407). In this same report, Gray reported one study that found students applied different skills when reading in different content areas. The students' use of specific reading skills was impacted by the teacher's' selection of materials and the teaching techniques employed during instruction of the selections. Gray (1935) explained that reading is a continual process that requires teachers to provide experiences for students at a level that is appropriate and addresses their needs, and that teachers should be knowledgeable about the reading process in order to support student learning.

Early research in the field of reading revealed that readers adjusted their reading rates to the material they read. With the emphasis on comprehension in lieu of elocution, there was a shift from oral reading to silent reading in the school setting (Smith, 2002). Venezky (1987) presented the idea that content area reading may have been a result of the realization that too much emphasis was placed on narrative reading instruction. As a result, "study skills and content-area reading entered the reading program as a stated interest in the 1920s" (p. 259). The

study of silent reading and "thought getting" had a significant impact on reading research

through 1925 (Smith, 2002, p. 155). Thorndike (1917) posited that passively engaging with

information resulted in lower comprehension of the material. He emphasized the importance of

summarizing information acquired during the silent reading process to improve understanding.

Considering a different aspect of learning in the content areas, Arthur I. Gates' early research on

recitation added to the development of content area reading instruction (Moore, et al., 1983). In

his study, Gates (1917) conducted tests to determine the effectiveness of recitation, the recall of

information from memory. Gates was attempting to determine if students' use of a "form of self-

testing" could retain more information from studied materials (McDermott & Naaz, 2014, p.

207). Gates found that recitation was not more effective than reading and vice versa. Recitation

was found to be equivalent to practicing learning of information done through the reading of the

material (1917). Like Thorndike, Gates explained that teachers needed to provide students with

opportunities to summarize reading assignments (Adams, Carnine, & Gersten, 1982). Moore,

Readence, and Rickelman (1983) described Gates as being supportive of many "learning from

text dissertations" that contributed to the body of knowledge on content area reading (p. 425). As

a result of these examinations, teachers began to utilize resources through basal programs and

teacher guides to provide instruction specific to reading in the content areas (Smith, 2002).

Harris (1948) explained that reading in the content fields was two-fold. One aspect of

reading content area materials utilizes specialized reading skills and the other aspect of reading

relates to general reading conditions that any content teacher recognizes as a need. Harris

recognized the basic conditions needed to be met in order to employ more specialized skills.

Harris outlined the basic conditions as consisting of ascertaining gaps in knowledge and then

providing appropriate background knowledge, setting a purpose for reading, using appropriately

leveled materials, and modeling when to slow reading down to study materials carefully. Further, Harris noted that when students process the information through note-taking or other study skills, such as outlining, students retain the information. Harris emphasized that the content teacher is critical in providing a setting that facilitates this part of the reading process.

Leary (1948) described the "efficient reader" as one who can negotiate reading in various content areas shifting between complex and less complex reading materials (p. 137). Further, Leary emphasized the importance of the content teacher's role in teaching students to read in their content area, and described the competent teacher as one who recognizes when the student does not have all the requisite skills to read content specific texts. A content area teacher is one who knows what skills are needed to engage successfully with content area materials and what problems may arise. The content area teacher provides the support needed to accomplish this goal. Leary discussed the different reading needs for reading in English, mathematics, science, and social studies. Each discipline has unique reading demands that require content teachers respond accordingly in their instructional practice.

Ruth Strang recognized that students in each of the content areas would need assistance to overcome reading content specific texts. In *Making Better Readers*, Strang and Bracken (1957), elaborated on specific cognitive strategies for each of the content areas, which included pre-teaching of vocabulary, establishing a purpose, use of graphic organizers, and activities that employ a problem-solution model using the text as a reference. Strang and Bracken recommended giving students opportunities to read texts that are thematically related to the content area in order to provide students with more opportunities to enhance their knowledge of the content area. In a later publication, Strang, McCullough, and Traxler (1967) acknowledged that content teachers may not see the benefit of teaching students how to apply reading skills in a

content area; however, they argued that when doing so, teachers would provide students with the ability to access the content for better understanding. Strang, McCullough, and Traxler provided strategies to enable students to master "special problems in reading-connected material" in different content areas (p. 298).

Herber (1969) described the development and use of study skills by content area teachers to assist students to move beyond memorization of information. Herber's examination of transfer versus transformation led him to believe that disciplines did not have specific skills but "that the uniqueness lies in semantics rather than in skills" (p. 18). He felt that students transformed or adapted a study skill to meet the reading requirements in each content area the student encountered. For example, Herber discussed how a student could use an organizational text structure that can be applied to different content areas or adapt the skill to more complex materials. Herber explained that students needed to be guided through the development of study skills.

Herber (1965) noted that reading is connected to study because, while the act of reading can occur without studying, studying does not happen without reading. The two are connected in the study of content information. Herber discussed studying as a "process [that] requires students to bring to bear on a problem all of the skills which are appropriate to the solution of the problem" (p. 2). Students select from an array of reading skills to read content information. Herber explained that it is the teacher's role to teach students the skills needed to study content information. Herber asserted that since content areas have different demands, content area teachers would need to teach the skills specific to their content area. Herber identified the following study skills that are effective for reading content information. They include word study, using book parts, using reference materials, knowing text structures, utilizing graphic

features, and utilizing organization skills, such as note-taking and summarizing. Students require support as they learn to study specific content area information. In his explanation of how instruction should be formulated in the secondary school system, Herber posited a three-step program which involved students receiving necessary skill instruction in a reading classroom, their English classroom, and the content classroom. In this way, Herber (1965) explained that the teaching of skills is not in isolation, but is taught as needed with the text being studied. As described by Herber, "competence is assured, not assumed" (p. 9). Herber emphasized that in each phase the teacher is responsible for instruction. The teacher guides students using appropriately leveled materials to lead students to become independent learners.

Herber's (1978) seminal work, *Teaching Reading in Content Areas*, addressed the difference between teaching reading and teaching the reading of content specific materials. He outlined the roles of each, the reading teacher and the content area teacher. He explained that the reading teacher is focused on the skill of reading while the content area teacher uses content as the vehicle to teach students content specific concepts. This delineation of teaching roles placed emphasis on the content teacher's use of general strategies, strategies applicable to any content area, in order for students to study content - before, during, and after. Daines (1971) supported the use of study skills instruction explaining that content teachers were uniquely equipped to address the reading needs of students within their content area. Daines classified content area study skills in six classification groups which included utilizing multiple reference sources, monitoring comprehension, identifying the main idea and supporting details, organizing ideas, following directions, and using visual aids to enhance comprehension of content. For each of these areas, Daines noted the importance of the teacher to provide instructional activities that were scaffolded using content related text.

Cunningham and Shablack (1975) explored the use of selective reading guides to improve reading comprehension of challenging texts. Like Daines, Cunningham and Shablack posited that content teachers knew which parts of the text was important to aid in understanding the content. The guide consisted of directing students to consider text structure and text features, to respond to content, and to even skim through information not deemed necessary for understanding. The teacher, as the content expert, designed the selective reading guide to draw students' attention to the pertinent parts of the text, and in doing so, not only model the appropriate content reading habits but also improve student comprehension of content.

Hafner (1974) posited that content teachers are reading teachers of their content. He stated that was the content teachers "task and privilege to help the student think more effectively about ideas in reading materials (p. viii). Hafner discussed the importance of continuing reading instruction through high school. The challenges of reading as students progress through the grade levels, the content becomes more challenging and complex. The content teacher needs to not only teach general reading skills but also those skills needed for the specific subject matter.

Robinson's (1975) methods textbook, *Teaching Reading and Study Strategies: The Content Areas*, discussed reading as a "process(es) used for learning" and not a subject (p. 2). Robinson described the act of reading comprehension as "when the semantic and syntactic structure of the message matches the syntactic and semantic knowledge of the reader" (p. 2). It is important for the content teacher to assist the student in connecting their knowledge with the new information in the content area. Robinson noted that content teachers do not feel like they should teach provide reading or study instruction. He explained that content teachers have a difficult time separating reading from learning content as reading and studying are a part of learning a content. Yet, the content teacher is uniquely qualified to teach students in "understanding,

interpreting, evaluating, organizing, and utilizing the required and supplemental reading" that they will encounter (Robinson, 1968, p. 11). Robinson asserted that content area teachers who use texts in their instructional practice must also teach students how to read those texts.

Robinson (1975) noted that content teachers unintentionally teach some reading and study skills, but if they do not receive continued professional learning support, the content teachers do not make the connection between these literacy practices and learning content. Robinson's method textbook presented content reading instruction as the use of strategies that can be applied to all contents and then strategies that are specific to content areas. The "common strategies" consisted of prereading strategies, vocabulary, and text features. The content specific strategies addressed the unique attributes of the content area including how common strategies are used.

Vacca (1989) reflected on the high school reading programs of the 1960s where remedial reading was the primary source of reading instruction and content area classrooms did not have students interact with texts other than to supplement lectures or check answers. Vacca posed that high school reading programs should be seen in every content classroom in a high school building. Vacca explained that as students moved through their K-12 experience, direct instruction would decrease as functional instruction increased. Content area teachers are uniquely qualified to provide the functional instruction that a reading teacher cannot. Vacca contended the secondary school reading teacher should not be the primary teacher of reading. Further, Vacca explained that secondary content area teachers should not only know "how to use reading as a tool for learning but also why and when to use reading strategies effectively" (p. 105). High school reading programs are strong when content teachers and reading teachers understand the role they each play in the development of secondary school readers.

Vacca (2002) promoted the idea of content area reading instruction and furthers earlier research by discussing the impact of using reading and writing strategies that enable students to access and process the content. Vacca (1975) explored the use of a functional reading strategy to improve content understanding. A functional ready strategy referred to instructional practices that demonstrated how to read content texts. In his study, Vacca utilized the use of reading guides in a social studies class. The reading guides were designed to enable students to recognize text structures and to model how students should read the text effectively. Vacca reported that students were able to identify text structures and understand the social studies texts more effectively than the students in the control groups. Vacca and Vacca (1996) defined content literacy as "the ability to use reading and writing to learn subject matter in a given discipline" (p. 8). Vacca considered how strategies could improve students' ability to process content knowledge as addressed in his content reading education textbooks (Vacca, Vacca, & Mraz, 2014).

In *Reading in the Content Areas: Research for Teachers* (1984), Dupuis reported a resurgence of interest in content area reading and attributed the interest to content teachers seeking assistance from reading teachers. In a review of the literature, Dupuis noted content teachers did not have an adequate understanding of reading in general or reading in their discipline. The negative attitude of content teachers regarding the idea of teaching reading in their content area was noted. Dupuis noted the perception existed despite studies that reported content teachers' frustration with students' inabilities to read content text.

Moore, Readence, and Rickelman (1983) explored more deeply the issue of when and how content reading instruction occurred and who provided the instruction. The authors examined the choices of who provided the instruction and how the instruction was designed. The

first included skills instruction provided by a reading teacher with the intention that these skills would transfer to content area texts. The other method placed the responsibility of skills instruction on the content area teacher in the context of reading text in the content classroom setting. The first, direct skills-centered instruction, focused on skills over content while the second, functional content-centered reading instruction, allowed for teachers to identify the skills needed to comprehend the selected content text. Functional skills instruction is based on the idea that the content teacher is best suited to teach the reading skills necessary to understand the content (Vacca & Mraz, 2011). Moore, Readence, and Rickelman (1983) explained that within the area of functional content-centered reading instruction, educators were divided into two groups. One group espoused the natural acquisition of skills needed to negotiate and understand content texts. Members of this group believed students would develop necessary skills as they worked through content texts. The second group considered the language of the text to develop instructional practices. How content teachers provide reading instruction in their classroom reflects their beliefs about content area reading instruction and quite possibly how they were taught in their content classrooms.

Dupuis (1984) explained that reading in the content areas share common instructional practices, such as vocabulary instruction. Additionally, all content area teachers recognize the importance of teaching comprehension as a content area teacher's responsibility. However, Dupuis noted that content area teachers do not have a full understanding of reading and often become frustrated with students who are unable to read the content information. Dupuis discussed how the disciplines have different approaches to instruction for skills such as vocabulary and comprehension. In Dupuis's *Reading in the Content Areas: Research for Teachers* (1984), the contributors discussed research and methods of instruction that were

specific to a content area. The contributors recognized that all content instruction should address vocabulary, study skills, and comprehension. In their development of each chapter, they addressed how the specific content areas differ from each other in terms of instructional needs. For example, in the discussion regarding math, Nolan (1984) noted a difference for reading in math, stating "the reading skills which are required differ significantly from those required for general reading" (p. 36). Nolan went on to explain that reading in math is "concerned with concept development and understanding the techniques for problem solving" and that "the best person to provide skill instruction is the regular mathematics instructor" (p. 36).

With changes in curriculum standards, researchers began to reconsider content area reading instruction. Bean (2000) reviewed the literature pertaining to the historical background of content area reading, particularly its expansion to include writing and discussion. Bean noted that in his methods textbook (Readence, Bean, & Baldwin, 1998, p. 4), they expanded the content area reading to content area literacy with the following definition: "The level of reading and writing skill necessary to read, comprehend, and react to appropriate instructional materials in a given subject area." Due consideration was being given to all aspects of literacy used in the academic setting, which includes reading, writing, listening, speaking, and thinking. This was a departure from earlier research that only considered the use of reading skills and study skills to learn information (Vacca & Mraz, 2011). Vacca and Mraz noted "the structure, vocabulary, and conceptual demands of discipline-specific text determine how a reader will think with, make sense of, and learn from that text" (p. 276-277). This shift to include literacies beyond reading may be due in part to technology and its impact on learning (Mraz, Rickelman, & Vacca, 2009). Further, they argued that it is the teacher's understanding of the discipline that will determine how to tailor the use of general literacy strategies in instructional practice.

Bader and Pearce (1983) asserted that content reading instruction is "an academic specialization that should not be 'trivialized' into isolated skills or competencies that 'anyone can teach' (p. 117). Content teachers need to understand the theories behind content reading practices and should develop practices to use in their practice. As a result of their study on the use of content reading and writing strategies, Pearce and Bader (1986) noted that professional learning is not useful if teachers do not use instructional strategies learned. In a review of content reading textbooks, Pearce and Reynolds (2004) noted that methods textbooks had evolved over a twenty-year period. Earlier textbooks were "skills oriented" and later textbooks were "process oriented" (p. 408). Strategies that can be applied to all, if not most, content areas reflect the notion that there is little difference in how students read in a content area. When using the skills-oriented approach, teachers recognize that their content has its own unique reading demands. Pearce and Reynolds expressed concern that a false dichotomy existed. They explained that "there can be generic processes that exist across disciplines and still have specific demands placed on a student in a specific discipline" (p. 408). Ultimately, it is the teacher who makes decisions about how to help students read content materials.

Throughout the evolution of content area instruction, the one constant in each researcher's findings is the importance of the teacher's knowledge of reading and knowledge of skills instruction needed for students to access content information.

The Development of Disciplinary Literacy

With the publication of the Common Core State Standards, there was a need to consider the ways in which we provide instruction in the disciplines. These standards emphasize the instruction of discipline specific literacy skills (Dunkerly-Bean & Bean, 2016). In a 2015 position statement, the International Literacy Association (ILA) communicated the need for

intentional literacy skills instruction in each of the core content areas: ELA, math, science, and social studies. As a result of the Common Core State Standards and versions of standards developed by non-participating states, students "are required to be taught to engage in specialized forms of reading and writing that are needed to participate successfully in the various disciplines" (p. 1).

Moje, Stockdill, Kim, and Kim (2011) explained that more attention is turning toward the readers of text and the context in which they interact with text for comprehension and construction of knowledge. Prior to this, the focus was on how the text was the vehicle for determining how literacy instruction was delivered. Disciplinary literacy, according to Shanahan and Shanahan (2008), is "an emphasis on the knowledge and abilities possessed by those who create, communicate, and use knowledge within the disciplines," whereas content area literacy utilizes "study skills that can be used to help students learn from subject matter specific texts" (p. 8). They went on to explain that content area literacy are the tools that enable students to understand a text while disciplinary literacy are the tools experts use to "engage in the work of the discipline" (p. 8). As a result, Shanahan and Shanahan noted that content area reading proponents only see content as what makes each discipline different and champion the use of generic reading strategies (summarizing and paraphrasing) to enable students to understand what they are reading in that discipline.

Shanahan (2011) explained that the notion of reading to learn has had a negative effect on secondary instruction. Shanahan asserted that teaching reading disappears because educators feel it is no longer necessary, when in fact explicitly teaching reading comprehension leads to higher achievement rates. A lack of instruction results in students lacking the necessary literacy skills to comprehend content materials. Shanahan commented on the ineffectiveness of teaching

strategies when done so without intention and described the "strategy a day approach" that focused on students learning strategies and not actually interacting with texts. Students need to both monitor their comprehension and engage with the content. Shanahan went on to explain that strategy instruction should be sustained over a period of time where students learn how and when to use a strategy to enhance their understanding of content. Shanahan added that reading instruction in the upper grades also includes vocabulary and fluency instruction. Teachers need to provide opportunities for students to engage with increasingly challenging text in order learn in subject areas. To do so, Shanahan emphasized that the teacher must help students "develop intentional cognitive strategies - general strategies that initially may be helpful with any kind of text, and more disciplinary and specialized strategies that students need as text demands change" (p. 128).

In *Collaborating for Success: The Vital Role of Content Teachers in Developing Disciplinary Literacy with Students in Grades 6-12* (2015), the International Literacy Association (ILA) defines disciplinary literacy as the skills that are specialized to content area and a student's ability to apply reading and writing in order to meet literacy demands in the content areas. Further, the ILA made it clear that, due to the specialized literacies of each discipline, an expert in the discipline would need to provide the necessary instruction to ensure students' success in the discipline. Heller and Greenleaf (2007) discussed the need for adolescent literacy reform that allows for more opportunities for students to achieve advanced literacy skills needed for success in the 21st century. They advocated for educators to expand the idea of content literacy instruction that goes beyond basic reading skills often associated with elementary reading instruction to recognizing and even clearly defining the literacy practices associated with each discipline.

McConachie and Petrosky (2010) explained that for over twenty-five years there has been discussion about how to address the issues with adolescent literacy. McConachie and Petrosky pointed to research that indicated literacy professionals needed to have a clear understanding of what adolescent literacy is. This discussion has led to changes in secondary instruction that include personalizing educational experiences. McConachie and Petrosky advised that changes need to consider students' ability to hold "intellectual conversations" about content and the teacher's ability to develop those skills (p. 3). In *Content Matters*, McConachie and Petrosky (2010) discussed disciplinary literacy as a form of apprenticeship that "socializes intelligence" (p. x). Further, they described disciplinary literacy

> as an example of an approach to teaching and learning that challenges students to participate in the intellectual work of the disciplines...it invites them to engage in cognitively challenging problems through carefully designed and sequenced lessons...disciplinary literacy asks students to apprentice to academic work and habits of thinking that they cannot yet do well (p. xi).

In this instructional framework, the teacher designs student experiences that engage students in challenging activities where the teacher serves as a mentor, coaching students how to read, write, inquire, and reason utilizing the discipline's norms (p. 10).

Researchers noted that each discipline presents its content in a variety of styles that include the use of unique vocabulary and often varying text structures as well as consideration of purpose and audience (Heller & Greenleaf, 2007). Similar beliefs were noted in the *Twenty-Fourth Yearbook for the National Society for the Study of Education* (1925), where Whipple explained that an effective reader employed the "habits of intelligent interpretation" which included noting the author's purpose and organization (p. 14). Disciplinary literacy is a construct

for teaching students to read "like an insider" so that they can apply the appropriate approach for the discipline specific text they are reading (Shanahan & Shanahan, 2008, p. 11). Since each discipline has its own literacy components, it follows that successful readers would need to vary their approach when reading discipline specific text. Content area literacy provides readers with generic reading strategies that can be applied to any text for the purpose of remembering information.

Shanahan and Shanahan (2008) examined the structures of the discourse of each discipline (ELA, science, math, and social studies) and noted the following areas for further examination: vocabulary, linguistic structure, and author awareness. Shanahan and Shanahan reported that vocabulary development in disciplinary literacy considers the structure of words and the purpose for the discipline's use of that structure. While content area literacy provides strategies to enable students to learn the vocabulary of a given discipline, disciplinary literacy examines how and why words are developed in that literacy. Shanahan and Shanahan examined the vocabulary of science and found that science vocabulary words are heavily based in Greek and Latin. Further, they noted that science uses these root words because they are not subject to change over time as other words may be and they more precisely describe the science object. In direct contrast to science vocabulary, history does not use vocabulary words to precisely describe something, instead vocabulary terms capture the meaning of a collection of events. Based on the literature, Moje, Stockdill, Kim, and Kim (2011) reported that the use of language in mathematics is done so with precision using words, symbols, and diagrams, and therefore creates a language that is unique to the discipline of mathematics. Shanahan and Shanahan noted that both content area literacy and disciplinary literacy are beneficial to students when learning vocabulary; however, how it is done in content area literacy and disciplinary literacy occurs in

different ways. Content area literacy focuses on strategies to learn words in any content area and disciplinary literacy examines how and why vocabulary is constructed in a discipline.

Another area that Shanahan and Shanahan (2008) explored was the linguistic structures of disciplines, noting that each discipline is constructed in such a way to communicate the theories of a discipline specific text. Unpacking these structures and their variations with students would enable students to better understand the text and what is being communicated. Along with how information is communicated in a discipline, Shanahan and Shanahan noted the importance of author awareness. They found that there are differences in how the author is perceived in different disciplines. For example, in history, the reader must be aware of the author since point of view is an important consideration in the social studies discipline. In literary reading, consideration of author may be given in order to provide context for what the author was trying to communicate through a work. Whereas in science, the author is only important to a scientist in determining the author's lab in order to provide context and credibility to the text. Fang (2012c) noted similar challenges in reading disciplinary texts and maintained that it was crucial for students to understand how a discipline's content is structured through its language.

Fang and Coatoam (2013) discussed questions that have arisen about disciplinary literacy. They posited to move away from the infusion model which uses generic strategies in the content classroom to a discipline specific model where discipline specific practices are a part of the instructional practice of the content classroom. Fang and Coatoam presented the two approaches to academic literacy instruction, content area literacy and disciplinary literacy, and explained how they differ. They provided a definition for content area literacy as a "developing students' ability to effectively use reading and writing as generic tools for learning from content

area texts" (p. 627). Further, they explained that proponents of this form of instruction believe the only difference in the disciplines is the content and therefore general strategies provide students with the necessary skills to access the information and demonstrate their understanding. Conversely, proponents of disciplinary literacy recognize the differences in the texts, discourse, and general habits of the different disciplines. Fang and Coatoam refer to Fang's (2012b) definition of disciplinary literacy as the "development of students' 'ability to engage in social, semiotic, and cognitive practices' consistent with those used by content experts" (p. 628). Those who support the use of disciplinary literacy instruction recommend students "use specialized literacy skills, strategies, and practices to engage in disciplinary learning and socialization" (p. 628).

In *This is Disciplinary Literacy*, Lent (2016) described disciplinary literacy as an "empowerment for content-area teachers" (p. 2). As described by Lent, disciplinary literacy is a new model to address the way content-area teachers provide literacy instruction within their discipline. Lent's position is that content-area teachers, as experts, are responsible for the literacy instruction of their discipline. Each discipline has specific literacy skills. Lent explained that when teachers adopt this approach to instruction, they understand how the literacy instruction develops a student's content knowledge. Lent cited "strategy fatigue" as a primary example of why teachers should abandon generic strategy instruction and teach students to think about "why and how they are reading" in their discipline (p. 4). Lent posited that deeper learning is a result of the application of disciplinary literacy instruction.

Lent (2009) argued that even the best of teachers become frustrated frequently when they ask students to read content material. Lent attributes this frustration to the lack of training content teachers receive. Lent asserted that content teachers should not have to provide direct

reading instruction and noted that content teachers are uniquely equipped to provide instruction in the specific literacies of a content area and how to read the content materials. Lent discussed how drawing inferences can look different in different content areas. For example, in English, the student would need to know what the elements of figurative language mean, speaker, and tone. In social studies, the student would need to know background information, symbols, and author's stance. In both cases, students are drawing inferences from content material; however, what a student needs to know is not a generic strategy; each content area has specific literacy needs. Lent proposed that literacy practices, such as teaching text structures, can increase a student's understanding of content texts. Lent explained that teaching how a text structure functions in a specific discipline leads to better comprehension. While Lent provides specific teaching ideas, the emphasis was on the importance of the teacher as a guide or facilitator when addressing a content area's literacies.

In their publication, *Reading and Representing Across the Content Areas: A Classroom Guide*, Wilson and Chavez (2014) argued that disciplinary literacy instruction is more than understanding disciplinary texts. Disciplinary literacy instruction should include the multimodal representations of a discipline. Wilson and Chavez cited discipline specific examples such as the use of video, photographs, graphs, and even the use of kinesthetic movement to show how disciplinary literacy instruction is more than understanding a piece of text. Wilson and Chavez posited that these "images, embodied representations, and other 'texts' exhibit discipline-specific patterns" (p. 3). They explained that each discipline has its unique framework of representations and specific activities and in order to become a "legitimate practitioner," students need the opportunity to learn about multimodal representations and have opportunities to produce their own representations (p. 129).

Based on this, Chavez and Wilson explained that teachers need to provide instruction to not only understand these various representations but also how to produce representations to enhance their understanding of the discipline. Wilson and Chavez acknowledged the use of comprehension strategies in order to increase metacognition in the act of reading and the use of discipline-specific approaches used by "advanced practitioners" (p. 7). They explained that teachers needed to apply these strategies and approaches to multimodal representations in order to develop multimodal representation competence. Wilson and Chavez noted the importance of providing students opportunities to utilize their diverse cultural backgrounds in the production of representations. Ultimately, the authors emphasized that teachers need to show students how and when to use these representations as appropriate to the purpose and discipline. In doing so, students are able "to construct in-depth understandings of key disciplinary concepts" (p. 128).

Buehl (2017) discussed the importance of developing and supporting a student's academic identity in the disciplines. The teacher fosters content knowledge, the "what," and builds disciplinary knowledge, the "how" and "why" (p. 12). This can be achieved through a gradual release framework where the teacher models an expert's thinking during various classroom experiences. Disciplinary discourse is important to developing disciplinary literacy. Buehl (2017) defined discourse as "the use of specialized vocabulary coined by disciplinary experts and how experts think within a discipline, how they question, examine, organize, and represent knowledge through language" (p. 46). Buehl proposed helping students make connections between the academic knowledge to their own funds of knowledge so that students build their academic identity and see themselves as capable of navigating through content. Buehl emphasized the teacher's role in fostering an academic identity through mentoring the student in the discipline.

Dobbs, Ippolito, and Charner-Laird (2017) described the challenges of adolescent literacy in terms of time limitations and scheduling. As a result, they noted that teacher preparation programs do not focus on apprenticing students into the literacies of the discipline they teach. Jetton and Lee (2012) surmised that teachers can apprentice students using a discipline's discourse practices. Teachers collaborate with each other to demonstrate how experts think, talk, and write within the discipline. Teacher training focuses on creating content specialists; therefore, teachers focus on delivering content. They described disciplinary literacy as the explicit instruction of the ways the discipline "builds and shares knowledge processes that are not always transparent to those both within and outside of the specific disciplines" (p. 15). Teaching the habits of mind, along with teaching how to read texts and write discipline appropriate responses is essential in disciplinary literacy instruction. Similarly, Elish-Piper, L'Allier, Manderino, and Di Domenico (2016) described disciplinary literacy as a means to build disciplinary knowledge. Disciplinary literacy instruction is "a complex intersection of teachers' knowledge about their students, disciplinary knowledge, pedagogical knowledge, and literacy knowledge" (p. 8). They explained that disciplinary literacy instruction consists of habits of thinking, valued texts, habits of practice, and beliefs about knowledge. These expert practices are reflected in a discipline. When designing learning experiences, teachers need to not only teach content knowledge but also teach the habits of thinking. Shahanan (2012) emphasized the need for literacy specialists and content specialists to work together to determine the literacy demands and best instructional practices in each discipline.

Despite the investment in time to teach both pre-service and in-service teachers about content literacy, teachers still resist the notion that they are literacy agents for their discipline (Fisher & Ivey, 2012; O'Brien, et al., 1995). Fisher and Ivey (2012) suggested that content

teachers "capitalize on reading and writing versus teaching reading and writing" (p. 6). Further, Fisher and Ivey proposed that all learning should be considered language based but noted that content teachers would continue to need support in implementing reading and writing in all student experiences. Vacca (2013) advocated for the role of literacy coaches to work with content teachers, as outlined in the *Standards for Middle and High School Literacy Coaches* (International Reading Association, 2006). In doing so, content teachers would receive the support needed to develop their disciplinary literacy practices and improve adolescent literacy skills.

Disciplinary Literacy Theory

In a review of the literature, Moje (2007) discovered a variety of beliefs about disciplinary literacy noting that generally the way disciplinary literacy is conceptualized can be categorized into one of four categories. Moje's review of the literature is framed within the context of social justice where all students have access to education and their beliefs and knowledge are recognized and honored. The categories as defined by Moje include teaching the cognitive literacy processes, teaching the discipline's epistemological processes, teaching the discipline's linguistic processes, and teaching how to navigate the culture of the disciplines.

The belief in teaching cognitive literacy processes is reflected in the idea of reading to learn. This was explored extensively by Herber and other researchers who worked in the area of study skills research and development. Moje (2007) noted general skills, such as K-W-L, were developed for text processing and applicable to all contents. Cognitive strategies are applied to all texts and do not consider the specific needs of reading texts in a discipline.

The epistemological view of disciplinary literacy encompasses how learners work within the discipline as well as how educators provide instruction within the discipline. In this category,

the literacy practices of the discipline are determined from within the discipline. Moje (2007) posited that perhaps the aim of studying a discipline like a member of the discipline is to develop critical reasoning skills that align with the traditions of the discipline. Moje noted that there has been little research on instructional practices in this area, particularly in the area of math and English Language Arts and pointed to the work of Wineburg in the area of social studies as an illustration of the epistemology of reading in a discipline. According to Moje, Wineburg noted the differences between how historians interact with texts and students in a social studies class utilize think-alouds to model how experts read texts.

The linguistic processes of a discipline, a process based on systemic functional linguistics, draws attention to the structure of texts within the discipline. This includes lexical, grammatical, and syntax as well as academic vocabulary. From this viewpoint, each discipline has specific rules for communicating the content of the discipline.

Finally, Moje (2007) discussed disciplinary literacy in terms of each discipline having its own culture. This category included the use of interdisciplinary studies in order for students to understand the practices of each discipline, so that the students can apply those practices fluidly as they move through units of study. In this form of disciplinary literacy instruction, the educator considers students' interests and knowledge in order to give them the space to explore and contribute to the discipline's knowledge. The work done by researchers and practitioners in this category recognizes the need for students to understand that knowledge is constructed as a result of human interaction.

Similarly, Fang (2012a) reported that there are "four distinct approaches to disciplinary literacy instruction" (p. 103). He labels these approaches cognitive, sociocultural, linguistic, and critical. Fang described the cognitive approach as those strategies used by any content area

teacher before, during, and after reading and writing texts. These cognitive strategies support the attainment of cognitive goals which include comprehension of texts. While there is evidence that supports the use of cognitive strategies, Fang noted that more recent research calls into question the use of cognitive strategy instruction, positing that cognitive strategies guide students to literacy outcomes (e.g. writing a summary) but do not necessarily lead to a true understanding of content.

Fang (2012a) explained the sociocultural approach considers a student's interest and motivation. Teachers using this approach incorporate the student's knowledge in the instruction. In doing so, students are more motivated to engage in the work since they have made connections with the discipline in a personal way. The sociocultural approach requires secondary teachers to reconceptualize how curriculum is presented, an educational concept that according to Fang does not align with current testing practices.

The linguistic approach as described by Fang recognizes that each discipline has its own form of language structure and vocabulary. This approach requires teachers to understand their discipline's discourses. Further, this approach can result in a drill method that does not connect to the content but is seen as something else students need to learn in addition to content. Fang cited the works of other researchers for this approach that showed that professional learning was an important component for success in this approach.

Fang (2012a) identified the critical approach which considers 'positioned' texts, also in "social-historical-political contexts" (p. 106). From this critical look at the content, students gain a deeper insight into how the discipline's knowledge is constructed. This approach has a strong social justice component where students consider content text beyond the curriculum as established through governments or businesses. Here, students seek to understand the values and

positions presented in the text. Fang noted that implementing this approach is successful if educators and students have a strong understanding of the linguistic structures within the disciplines.

More recent publications have called for a synergistic approach to secondary literacy instruction that considers struggling readers as well as a deeper understanding of the disciplines themselves (Brozo, Moorman, Meyer, & Stewart, 2013; Dunkerly-Bean & Bean, 2016). This approach gives due to consideration to the elements of content literacy and strategies that support comprehension in combination with literacy practices used in the disciplines. As a result, literacy specialists and content specialists can engage in a dialogue that produces instructional practices that benefit students in their content classrooms.

Recent efforts have been made to develop instructional practices that include all aspects of Moje's Disciplinary Literacy Theory. This framework is based on the belief that disciplinary literacy is comprised of a "shared language and symbolic tools that members of academic disciplines use to construct knowledge alongside others" (Rainey, Maher, Coupland, & Moje, 2017, p. 371). This form of disciplinary literacy teaching recognizes that secondary teachers may not be able to articulate what discipline experts do in their daily instructional practices. The inquiry-based framework incorporates aspects of the four categories of Moje's Disciplinary Literacy. The 4-E heuristic guides the work of students as they interact with disciplinary texts, provides opportunities for students to complete tasks that reflect disciplinary practices, and considers different aspects of language and how that language is used in the discipline and across disciplines (Moje, 2015). Student experiences are carefully designed to incorporate all the beliefs of disciplinary literacy.

Moje's Disciplinary Literacy Theory, comprised of four beliefs about disciplinary literacy, and Fang's approaches to content literacy instruction illustrate the various ways practitioners can provide content instruction. Moje conceded that it is possible to have some overlap within the categories and that they are not mutually exclusive. Similarly, Fang discussed how each of the approaches are complementary, allowing teachers to utilize instructional practices from each of the approaches as they deem appropriate to reach their instructional goals. The fluidity of the beliefs and approaches illustrate the complexities of literacy instruction in the secondary setting.

Delphi Studies in Literacy

The Delphi method, developed by the RAND Corporation as a forecasting tool, has been applied in the field of education since as early as 1965 (Weaver, 1971). Weaver noted that its use in the field of education went beyond a forecasting tool and had been used for other applications which included exploring opinions held by members of an organization, allowing for the consideration of how the future is considered, as well as an educational tool that allows individuals to examine the future in different ways. Rieger reported in 1986 that there was a notable increase in the number of Delphi method dissertations in the field of education. He attributed the increase in the use of the Delphi method to the method's cost-effective way to gather information from experts for education planning. The method allows researchers to collect perceptions and ideas in order to improve instructional practice without having to convene the participants in a single location.

Conducting a search using the ERIC database system with the search term "Delphi" yielded 186 dissertations published since 1999. Continuing with the use of the ERIC database system and using the search terms "Delphi study" and "literacy" yielded ten dissertations that

had been published since 1999. The dissertations listed primarily addressed information and digital literacy. To expand the search, I used the Texas A&M Corpus Christi Bell Library databases. Using the search terms "Delphi" and "content reading" resulted in a list of three dissertations.

The Delphi studies that were considered for this literature review varied in topic and type of Delphi study. Of those that are related to the field of literacy, the Delphi method was used to identify literacy practices for English Language Learners, digital literacies, the use of graphic organizers, reading comprehension, and non-fiction reading strategies for the science classroom. Each of these studies examined areas of literacy in order to further define best practices for instruction (Brown, 2011; Geiselhofer, 2010; Suarez, 2011; Wegner, 2011; Zunker, 2009). Zunker (2009) used a modified Delphi to develop a list of significant works in reading comprehension, conducting a content analysis of the participants' responses to determine themes in the understanding of reading comprehension in the list of works and the participants' responses regarding those works.

Of the twenty-four published dissertations that resulted from using the search term "disciplinary literacy," none used the Delphi method to collect data. Of the studies conducted to examine disciplinary literacy, six studies examined preservice and in-service teachers' perceptions of disciplinary literacy utilizing case study methods (Aumen, 2017; Bottomley, 2016; Cramer, 2014; Hotz, 2014; Powell, 2018; Wood, 2017). In each of these studies, the researchers drew similar conclusions. They called for more research to further define disciplinary literacy and for more professional learning for both preservice and in-service teachers in the integration of literacy and content instruction. None of the studies examined literacy experts' perceptions and beliefs regarding disciplinary literacy.

Chapter Summary

Research conducted in the early 1900s associated content reading with the ability to study and memorize texts. Due to the rise of behaviorism, less attention was given to the notion of study techniques to remember information. Herber's (1978) seminal work *Teaching Reading in Content Areas* gave rise to the use of strategies with any text as determined by the content expert (Bean, 2000). Bean described the research of the 1980s as a means "to validate content area literacy strategies" using quasi-experimental methodology, while the research of the 1990s looked to qualitative methods to discover the impact of teacher-student interaction in the classroom setting on literacy instruction and student learning (p. 641).

When considering the research conducted over a hundred-year period, there seems to be numerous similarities between content area literacy and disciplinary literacy instruction. Early researchers noted the differences in the content areas or disciplines and attempted to address those differences in a variety of ways. Researchers considered readers' attitudes, study skills, and later, specific strategies that would enable students to access and process content information.

Researchers noted that strategy instruction was effective in lab settings; yet, content teachers still did not routinely use literacy strategies in their instructional practice (Alvermann & Moore, 1991; Fisher & Ivey, 2005). Alvermann and Moore reviewed experimental studies on teaching strategies, strategies that depend on the teacher to present and support the strategy. Overall, they noted that all the strategies were most effective with "more-able readers" (p. 960). Due to the variation in disciplines, beliefs of what constitutes text, text complexity, and students' academic tracks, teachers varied in their instructional practices in the area of reading.

Despite proponents of the use of strategy-driven instruction that enables students to understand content, more recent researchers claim that literacy instruction should consider

specific attributes of the discipline. The emphasis is on a student's ability to consider textual information like an expert in the discipline might. Fagella-Luby, Graner, Deshler, and Drew (2012) noted that the Common Core State Standards require the instruction of disciplinary literacy skills but do not identify the prerequisite skills necessary to do so. The authors supported their conclusion with Shanahan and Shanahan's (2008) literacy pyramid previously discussed in this review. While Fagella-Luby, Graner, Deshler, and Drew did not discount disciplinary literacy strategies, they found little evidence in research to support the exclusive use of disciplinary literacy strategies at the secondary level. Vacca and Mraz (2011) argued that whether one refers to it as "content-area reading, content literacy, or disciplinary literacy, the driving principle behind each of these instructional concepts is applicable today as it was in Herber's time: content determines process" (p. 276).

Literacy experts differ in their beliefs about how best to provide literacy instruction in the content areas. Based on a review of the literature, the following research questions were developed to guide this study:

1. How do experts in the field of content area reading instruction define disciplinary literacy and describe it in relation to content area literacy?

2. What significant works in disciplinary literacy are noted by experts in the field of content area reading instruction and why are they noted as significant?

3. What commonalities emerge in the rationale provided by participants when identifying significant works for disciplinary literacy?

CHAPTER III: METHODOLOGY

The methods used to collect and analyze data are discussed in this chapter. The chapter is organized in the following parts: research design and rationale, participant selection, data collection, procedures for data analysis, trustworthiness, and data validation.

Research Design and Rationale

This study used a Delphi method to collect data from eight experts in the field of secondary literacy. The researcher investigated these experts' opinions and beliefs regarding disciplinary literacy, content literacy, and the significant works that contribute to the development of disciplinary literacy. A review of the literature revealed varying beliefs of what disciplinary literacy is and what instructional practices that result from these beliefs look like in the secondary classroom setting (Fang, 2012a; Lent, 2016; Moje, 2007, 2015; Shanahan & Shanahan, 2008, 2012).

Data collection included three questionnaires and was completed in five months. Using the Delphi method to collect data from experts, analysis of the Likert-scale ratings, and content analysis of the experts' responses, the researcher sought to understand the following research questions.

1. How do experts in the field of content area reading instruction define disciplinary literacy and describe it in relation to content area literacy?

2. What significant works in disciplinary literacy are noted by experts in the field of content area reading instruction and why are they noted as significant?

3. What commonalities emerge in the rationale provided by participants when identifying significant works for disciplinary literacy?

Developed as a method for long range forecasting by the RAND corporation, the Delphi method was intended to reduce the negative effects of group decisions which includes the ability

45

of group members to take control of the group, thus negating the input of other group members (Riggs, 1983). The original study conducted by the RAND corporation utilized a series of questionnaires and provided controlled feedback to gather information from experts (Linstone & Turoff, 1975). Linstone and Turoff defined the Delphi technique as follows:

> Delphi may be characterized as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem (1975, p. 3)

They went on to note the Delphi technique is evolving in process and purpose. Yousaf (2007) described the Delphi method as a "group process used to survey and collect the opinions of experts on a particular subject" (p. 1). Gathering experts in one place is time and cost prohibitive; therefore, the technique allows for a researcher to gather information from experts in a given field when it is not possible to have the panel together in one physical location. Linstone and Turoff (1975) explained that a Delphi study is appropriate for problems in which a collection of expert opinions would be beneficial.

The Delphi method is useful when there is a topic for consideration that needs the opinions of experts for further clarification (Yousaf, 2007). The current study utilized a Hegelian, or Dialectical, Inquiring System (IS) as the basis for its design. As one purpose of this study was to develop clarity, not to reach consensus, on disciplinary literacy, the Dialectical IS was used. The Dialectical IS is a system that recognizes conflict as a means to develop new ideas or provide clarity to existing ideas. Its use as the philosophical basis for the design of this Delphi study allows experts to provide input regarding opposing viewpoints. Based on the information provided by the experts, the researcher was able to examine and then formulate a "creative synthesis" (Mitroff & Turoff, 1975, p. 29).

During a review of the literature on disciplinary literacy, it was noted that researchers have differing opinions on how disciplinary literacy is defined and how it differs from content literacy. Using the Dialectical IS as a basis for its design, the Delphi method recognizes that there are conflicting ideas on the topic. Participants can agree or disagree with statements, thus allowing for the researcher to critically examine each side of the issue (Turoff, 1975). Experts are able to share their expertise and knowledge and consider other thoughts on the topic without pressure to change their ideas to conform to the group. Since the panel does not physically meet to discuss the topic, the researcher can gather expert knowledge without the influence of dominant personalities or pressure on individuals to conform to the majority (Hsu & Sandford, 2007; Linstone and Turoff, 1975).

The Delphi method occurs over a period of time using a series of questionnaires and feedback to collect expert information on a specified topic. Thangaratinam and Redman (2005) explained the Delphi has a minimum of two rounds but the number of rounds beyond that is not definitive in the literature. The Delphi technique has the following characteristics: "anonymity, controlled feedback, and statistical group response" (Yousaf, 2007, p. 3-4). Since panel members are not identified throughout the study, they remain anonymous to one another. The researcher facilitates or monitors the feedback of respondents through questionnaires, allowing each respondent to consider their response in comparison to the group thinking. The feedback process used in the Delphi method minimizes the effect of noise that can be found during group interactions. This group noise can keep groups from focusing on the topic under discussion and can result in biased information (Hsu & Sandford, 2007).

Participant Selection

Using the Delphi method, the researcher collects information from a group of experts in any given field or area using a series of surveys or questionnaires (Brown, 1968). To address the research questions, the Delphi method was used in the current study to allow for experts in the field of content area reading instruction to have a facilitated discussion through a series of iterative questionnaires. Group members had the opportunity to respond to definition statements and to summary responses in a facilitated discussion without having to meet in person (Okoli & Pawlowski, 2004).

This Delphi study utilized the collective knowledge of experts in the field of content area reading instruction. Ludwig (1997) emphasized that due consideration should be given to the participant selection process. Since the primary source of data is provided by the participants, it is imperative that their expertise be documented in the literature. Prior to selecting participants from an expert pool, the researcher should consider the qualifications needed to be considered a potential participant. To select experts to serve on the panel, a Knowledge Resource Nomination Worksheet (KRNW) (Appendix B) was utilized to ensure that due consideration was given to expertise and representation in the literature (Okoli & Pawlowski, 2004). Categories on the KRNW included research interests and the number of publications and presentations about content literacy and disciplinary literacy. In addition to looking at potential participants' websites or curriculum vita to locate this information, the researcher searched the Texas A&M Bell Library databases using the following search terms: literacy, disciplinary literacy, and content reading. (Appendix B).

Upon completion of this search, a list of candidates that were representative of the categories in the KRNW was drafted. The candidate list was reviewed by two reading professors

from a South Texas university. The professors deleted names of participants who they felt may over-represent a university. Based on their experience, the reviewers added names for consideration. (Appendix A).

After the list was reviewed, the researcher contacted potential participants. An invitation, along with a brief explanation of the Delphi study, was emailed to potential participants. (Appendix C). In addition to the letter, participants were given a copy of an information sheet outlining the study. (Appendix D). For those who declined, the researcher issued a thank you note and asked the individual if he or she would nominate other experts who might be qualified to participate in this study. Nominees are noted on Appendix A. By creating a non-probability purposive sampling using snowball sampling, this ensured that the list of potential participants included as many experts as possible, as well as any potential participants missed in the initial review of the literature.

In a review of the literature, Ludwig (1997) explained that recommended group sizes vary for a Delphi study. Ludwig reported that some researchers suggest large group sizes of 15-20 while other researchers suggest that the needs of the study dictate the size of the group. Hsu and Sandford (2007) cautioned researchers on having a large expert panel as it may result in lower participation and increased time on behalf of the expert panelists to respond and the researcher to summarize the data. Further, Hsu and Sandford reported there is not a standard for the number of panelists; however, 10 to 15 is common. Okoli and Pawlowski (2004) noted that the Delphi is a group decision making tool based on panelists' expertise and therefore does not rely on having a statistical representation of a population. For this Delphi study, the researcher was seeking 8 to 10 experts in the field of content area reading instruction to participate as part of the expert panel.

After sending the initial invitations, the following participants agreed to participate in the study:

1. Dr. Tom Bean
2. Doug Buehl
3. Dr. Roni Jo Draper
4. Dr. Douglas Fisher
5. ReLeah Lent
6. Dr. Maryann Mraz
7. Dr. David O'Brien
8. Dr. Evan Ortlieb
9. Dr. Catherine Snow
10. Dr. Wolfram Verlaan

After the first round of the study was completed, there were nine participants. One participant did not respond to the first questionnaire or to subsequent requests to respond. Data collected from the first iteration included responses from the following participants:

1. Dr. Tom Bean
2. Doug Buehl
3. Dr. Douglas Fisher
4. ReLeah Lent
5. Dr. Maryann Mraz
6. Dr. David O'Brien
7. Dr. Evan Ortlieb
8. Dr. Catherine Snow
9. Dr. Wolfram Verlaan

For the second round, one participant did not respond to the second questionnaire or to subsequent requests to respond. Data collected from the second iteration included responses from the following participants:

1. Dr. Tom Bean
2. Doug Buehl
3. Dr. Douglas Fisher
4. ReLeah Lent
5. Dr. Maryann Mraz
6. Dr. David O'Brien
7. Dr. Evan Ortlieb
8. Dr. Wolfram Verlaan

For the final iteration, the participant list remained the same as no participants declined to respond.

Data Collection

To facilitate response time, storage of responses, and anonymity of respondents, the researcher utilized the Texas A&M - Corpus Christi email system to communicate with participants and Google Forms to create questionnaires and Google Sheets to store participant responses. A paper copy was made available to participants if that was their preferred method of response. All participants elected to use the electronic versions of the questionnaires.

The collection of data took four months from the time the first iteration was sent to the participants who accepted the invitation until the receipt of the final response from the third and final iteration. The collection method involved three iterations of questionnaires. Figure 1 illustrates the three iterations of data collection and analysis used in this study.

Researcher Actions | Participant Actions

Round 1

Sends open-ended questionnaire → Answers questions

Round 2

Summarize definitions to create definition statements → Rates each definition and provides rationale for rating

Round 3

Calculates median of each item

Summarizes rationale statements → Reviews individual rating and rationale in view of group response

Opportunity to reconsider rating and respond

Figure 1. The design of the iterations and reporting of data.

The open-ended questions used for this study were developed from a pilot study the researcher conducted prior to beginning of this study. Skulmoski, Hartman, and Krahn (2007) discussed the use of a pilot study to test the questionnaire and, if needed, make revisions based on the feedback. The purpose of the pilot study was to test the open-ended questions that would be used during the first iteration of the Delphi study. In the pilot study, literacy professors from four Texas universities were invited to respond to the following open-ended questions:

1. How do you define disciplinary literacy?

2. How does disciplinary literacy compare to content literacy?

3. What are significant works in disciplinary literacy and what attributes make them significant to the field of disciplinary literacy?

After the responses were reviewed, it was evident that the questions did not adequately address the purpose of this study. Participants were then asked to provide feedback to the researcher on how they would improve the questions for clarity. Based on their feedback, four open-ended questions were developed.

First Iteration Questionnaire. The first iteration questionnaire asked expert panelists to provide a definition of disciplinary literacy as they understood it, to explain how disciplinary literacy differs from content area literacy. and identify significant works in the area of disciplinary literacy and what qualifies these works as significant. Yousuf (2007) explained this questionnaire may ask for the panelists' opinions based on their experiences and judgments. Using a Google Form, the participants were asked to respond to the following four open-ended questions.

1. How do you define disciplinary literacy?
2. How is disciplinary literacy similar to content literacy and how is it different from content literacy?
3. What are significant works in the field of disciplinary literacy?
4. What attributes make these works significant to the field of disciplinary literacy?

Second Iteration Questionnaire. The researcher synthesized participants' responses from the first iteration to craft definition statements to be used in the second iteration of the study. Participants were also shown a list of works that all participants had identified as significant in the field of disciplinary literacy. In some cases, participants only noted "any works by" or only provided an author's name. The researcher wanted to honor the participants' input; therefore,

publications by suggested authors were selected to add to the list. Works were selected that had been discussed in Chapter 2 of this paper or were identified through a database search as having been cited in other publications. Based on the data, the second questionnaire was created to indicate three section titles: (1) Defining Disciplinary Literacy, (2) Content Literacy and Disciplinary Literacy, and (3) Significant Works.

For Section 1 of the questionnaire, participants were presented with five definition statements for disciplinary literacy. As previously explained, the definition statements were synthesized from the participants' responses to the first question - How do you define disciplinary literacy? The definition statements, synthesized from the participants' responses, are shown below:

- Disciplinary literacy is the strategic use of cognitive processes required to understand discipline-specific texts.
- Disciplinary literacy moves beyond generic metacognitive strategies to utilize the particular approaches needed to be or become literate in a discipline.
- Disciplinary literacy moves beyond knowing the 'what' of disciplinary knowledge to the 'how' and 'why' - an understanding of how and why experts in a field of study create, communicate, and share disciplinary knowledge, which enables students to navigate a wide range of disciplinary texts.
- Disciplinary literacy is the intersection of the literacy practices, the utilized language forms, and the epistemology of the discipline.
- Disciplinary literacy is the use of discipline-specific literacy tools (reading, writing, speaking, listening, and reasoning) used by experts in order to participate in a subject area.

Participants were asked to use a Likert-scale rating system to denote their level of agreement with each statement - 1-Strongly Agree, 2-Agree, 3-Neutral, 4-Disagree, 5-Strongly Disagree. Following each rating, participants were asked to provide a rationale statement for their level of agreement.

The same procedure was used for Section 2 of the questionnaire. Participants were presented with the statements, synthesized from participants' responses to question 2 - How is disciplinary literacy similar to content literacy and how is it different from content literacy? As with the statements in Section 1 of the questionnaire, participants were asked to use the same Likert-scale rating system. Statements for this section are shown below.

- Content literacy is a set of skills applied to understand content while disciplinary literacy is a set of skills constructed within the discipline reflecting the discipline's texts, discourses, and epistemology.

- Content literacy refers to general literacy strategies used to support the development of background knowledge and content learning. Disciplinary literacy refers to specific literacy strategies and practices of a field of study.

- Content literacy emphasizes understanding text. Disciplinary literacy extends content literacy so that texts may be used authentically for real world application.

- Both content literacy and disciplinary literacy use cognitive strategies for instruction. Disciplinary literacy processes are created within a discipline and content literacy processes are applied to a discipline.

For Section 3 of the questionnaire, participants were asked to rank their top ten works with one (1) being the most significant. Then, participants were directed to provide a rationale for their top three choices. The proposed works as submitted by participants are shown below.

Alvermann, D. E. (2002). Effective literacy instruction for adolescents. *Journal of literacy Research, 34*(2), 189-208. doi: 10.1207/s15548430jlr3402_4

Alvermann, D. E., & Moore, D. W. (1991). Secondary school reading. In R. Barr, M.L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.). *Handbook of reading research*, *2*, 951 983. Mahwah, NJ:Lawrence Erlbaum Associates.

Brozo, W., Moorman, G., Myer, C. K., & Stewart, T. T. (2013). Content-area reading and disciplinary literacy: A case for the radical center. *Journal of Adolescent & Adult Literacy, 56*(5), 353-357. doi: 10.1002/JAAL.153

Buehl, D. (2017). *Developing readers in the academic disciplines*. Portland, ME:Stenhouse Publishers.

Conley, M. W. (2008). Cognitive strategy instruction for adolescents: What we know about the promise, what we don't know about the potential. *Harvard Educational Review*, 78(1), 84-106. doi: 10.17763/haer.78.1.j612282134673638

Dobbs, C.L., Ippolito, J., & Charner-Laird, M. (2017). *Investigating disciplinary literacy: A framework for collaborative professional learning*. Cambridge, MA:Harvard Education Press.

Draper, R. J., & Broomhead, G. P. (Eds.). (2010). *(Re)imagining content-area literacy instruction*. New York, NY:Teachers College Press.

Dunkerly-Bean, J., & Bean, T. W. (2016). Missing the savoir for the connaisance: Disciplinary and content area literacy as regimes of truth. *Journal of Literacy Research, 48*(4), 448-475. doi: 10.1177/1086296X16674988

Faggella-Luby, M.N., Graner, P.S., Deschler, D.D., & Drew, S.V. (2012). Building a house on

sand: Why disciplinary literacy is not sufficient to replace general strategies for

    adolescent learners who struggle. *Topics in Language Disorders, 32*(1), 69–84. doi:

    10.1097/TLD.0b013e318245618e

Fang, Z. (2012). Language correlates of disciplinary literacy. *Topics in Language Disorders,*

    32(1), 19-34. doi: 10.1097/TLD.0b013e31824501de

Fang, Z., & Schleppegrell, M.J. (2010). Disciplinary literacies across content areas: Supporting

    secondary reading through functional language analysis. *Journal of Adolescent & Adult*

    Literacy, 53(7), 587–597. doi: 10.1598/JAAL.53.7.6

Fisher, D., & Ivey, G. (2005). Literacy and language as learning in content-area classes: A

    departure from "Every teacher a teacher of reading." *Action in Teacher Education, 27*(2),

    3-11.

Grant, M. C., Fisher, D., & Lapp, D. (2015). *Reading and writing in science: Tools to develop*

    disciplinary literacy. Thousands Oak, CA:Corwin Press.

Heller, R., & Greenleaf, C. L. (2007). *Literacy instruction in the content areas: Getting to the*

    core of middle and high school improvement. Alliance for Excellent Education.

Herber, H. L. (1978). *Teaching reading in content areas*. Upper Saddle River, NJ: Prentice Hall.

Herber, H. L., & Sanders, P. L. (Eds.). (1969). *Research in Reading in the Content Areas: First*

    Year Report. Syracuse University.

Lee, C.D., & Spratley, A. (2010). *Reading in the disciplines: The challenges of adolescent*

    literacy. New York, NY:Carnegie Corporation of New York.

Lent, R. C. (2015). *This is disciplinary literacy: Reading, writing, thinking, and doing... content*

    area by content area. Thousand Oaks, CA: Corwin.

McConachie, S. M., & Petrosky, A. R. (Eds.). (2009). *Content matters: A disciplinary literacy*

approach to improving student learning. San Francisco, CA:John Wiley & Sons.

Moje, E. B. (2007). Developing socially just subject-matter instruction: A review of

the literature on disciplinary literacy teaching. *Review of research in education, 31*(1), 1-

44.

Moje, E.B. (2008). Foregrounding the disciplines in secondary literacy teaching and learning: A

call for change. *Journal of Adolescent & Adult Literacy, 52*(2), 96–107.

Moje, E. B. (2015). Doing and teaching disciplinary literacy with adolescent learners: A social

and cultural enterprise. *Harvard Educational Review, 85*(2), 254-278,301. doi:

10.17763/0017-8055.85.2.254

Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking

content area literacy. *Harvard Educational Review, 78*(1), 40–59.

Shanahan, T., & Shanahan, C. (2012). What is disciplinary literacy and why does it matter?

Topics in Language Disorders, 32(1), 7–18. doi: 10.1097/TLD.0b013e318244557a

Snow, C. & Moje, E. (2010). Why is everyone talking about adolescent literacy? *The Phi Delta*

Kappan, 91(6), 66-69. doi: 10.1177/003172171009100616

Vacca, R. T., Vacca, J. A. L., & Mraz, M. E. (2005). *Content area reading: Literacy and*

learning across the curriculum. Boston, MA: Pearson.

Wilson-Lopez, A., & Bean, T. W. (in press). *Content area and disciplinary literacy: Strategies*

and frameworks. International Literacy Association, Dec. 18, 2017.

Wineburg, S. (2001). *Historical thinking and other unnatural acts: Charting the future of*

teaching the past. Temple University Press.

Zygouris-Coe, V. (2012). Disciplinary literacy and the common core state standards. *Topics in*

Language Disorders, 32(1), 35-50. doi: 10.1097/TLD.0b013e31824561a2

Zygouris-Coe, V. I. (2014). *Teaching discipline-specific literacies in grades 6-12: Preparing*

       students for college, career, and workforce demands. New York, NY: Routledge.

       Third Iteration. For the third and final iteration, each panel expert was presented the

median results from the rating of definition statements, his or her rating, his or her rationale, and

a summary statement. The summary statements were synthesized from all participants' rationale

statements for each definition statement rating. (Appendix E and Appendix F). In this iteration,

participants were asked to review their responses and were invited to revise their responses or to

provide additional remarks. In doing so, participants had the opportunity to check their ratings

and rationale statements, consider how their responses compared to other participants, and add to

or revise their original ratings or rationale statements.

       Originally, the researcher intended to determine what the significant works regarding

disciplinary literacy are. This data would be used to answer research question number three -

What are significant works in the field of disciplinary literacy? Following the identification of

works, the researcher intended to use participants' rationale statements for their rankings to

provide the basis for identifying what attributes of these works make them significant. The

analysis of the data would address research question four - *What attributes make these works*

significant to the field of disciplinary literacy? See Appendix K for participants' responses.

       After receiving and reviewing the second iteration responses, the researcher decided to

abandon this pursuit as participants either chose not to respond to that part of the questionnaire,

did not follow the instructions, or gave little or no rationale for their rankings. (Appendix N).

The researcher did present to each participant his or her responses to this section of the

questionnaire for the third iteration to ensure that each participant's responses had been

accurately recorded.

Procedures for Data Analysis

Data analysis was ongoing throughout the data collection process using the following methods: statistical means of Likert-scale ratings and content analysis of participants' written responses. Data analysis occurred after responses were received from each iteration of the questionnaires.

First Analysis
- Data from first iteration categorized using *a priori* codes
- Data analyzed for similarites and differences
- Data sythesized into definition statements for Likert-scale rating

Second Analysis
- Median ratings determined
- Rationale statements synthesized into rationale summary statements

Third Analysis
- Participants' rationale statements and follow up commentary coded using process coding
- Codes categorized and themes developed

Figure 2: Process of Data Analysis

As data was collected from the expert panelists, a content analysis was conducted to determine the commonalities and themes in the participants' responses. Content analysis "utilizes a set of procedures to make valid inferences from text" (Weber, 1990, p. 9). Further, content analysis is a process that looks for similarities in text to classify, code, and develop themes for the purpose of a deeper understanding of the topic of study (Hseih & Shannon, 2005). Krippendorff (1989) defined content analysis as a "research technique for making replicable and valid inferences from data to their context" (p. 403). Content analysis is grounded in the field of

communication. As this study promoted a form of dialogue between participants, an analysis of their statements was conducted.

As the purpose of the first section of the study was to provide more clarity on existing literature, the researcher used direct content analysis when analyzing the proposed disciplinary literacy definitions and the responses explaining how disciplinary literacy compares to content literacy. Hseih and Shannon (2005) define direct content analysis as the use of "existing theory or prior research [that] exists about a phenomenon that is incomplete or would benefit from further description" with the purpose to "validate or extend conceptually a theoretical framework or theory" (p. 1281). In this type of content analysis, codes are established *a priori*. Coding developed *a priori* is often developed "using coding schemes developed by other researchers" (White & Marsh, 2006, p. 32). This form of content analysis uses the codes to "guide the discussion of findings" (Hseih & Shannon, 2005, p. 1283). The participants' definitions for disciplinary literacy were coded using Moje's (2007) Disciplinary Literacy Theory categories: Cognitive Literacy Processes, Epistemological Processes of the Disciplines, Linguistic Processes of the Disciplines, and Disciplinary Literacy Pedagogy as Navigation Across Cultural Boundaries. As previously discussed, Moje reviewed the literature regarding disciplinary literacy and determined that these four dominant beliefs were present. The researcher used these beliefs as *a priori* codes to analyze participants' responses. (Appendix G). A second analysis of the same data set was conducted using Fang's (2012a) Approaches to Developing Content Area Literacies. (Appendix H). In a review of the literature, Fang determined there were four instructional approaches to content area literacy - Cognitive Approach, Sociocultural Approach, Linguistic Approach, and Critical Approach. This method of using *a priori* codes has been used in a previous study where the researchers were able to analyze how disciplinary literacy applied

61

to their discipline (Frambaugh-Kritzer, Buelow, & Steele, 2015). In that study, the researchers used characteristics of disciplinary literacy that resulted from their review of the literature.

After the analysis using the *a priori* codes, the researcher synthesized the participants' proposed definitions to create five definition statements. The definition statements were presented to participants in the second iteration questionnaire. As previously discussed, the participants were asked to use a Likert-scale to rate the proposed definitions and provide a rationale for each rating. In addition to providing proposed definitions for disciplinary literacy, participants were asked to explain how content literacy compared to disciplinary literacy. The researcher used a compare and contrast chart to analyze the responses. (Appendix J). After placing data on the table, the researcher synthesized the data to draft summary statements that reflected the participants' beliefs about how content literacy compares to disciplinary literacy. The statements were presented to participants in the second iteration questionnaire to rate using a Likert scale. Again, participants were asked to provide a rationale for each rating.

The second iteration questionnaire asked participants to use a Likert-scale rating to rate the definition and summary statements presented to them. Additionally, participants were asked to provide a rationale statement for each rating. Data from this iteration was analyzed using two methods - statistical means and descriptive coding. Hsu and Sandford (2007) discussed the statistical analysis of data and reported that measures of central tendency and level of dispersion are used to analyze the expert panelists' Likert-scale ratings. In a review of the literature, Hse and Sandford discovered that the use of the measures of central tendency (mean, median, and mode) each have a specific purpose depending on the desired outcome of the researcher. Weaver (1971) asserted that the Delphi technique as a forecasting tool should be based on what is a reasonable outcome not an expectation of what will happen. It was noted that a weakness of the

Delphi relates to how the consensus is reached as it was observed in some experiments "that people tend to shift their estimates toward a group norm under conditions of the iteration" (p. 270-271). Weaver suggested that using the median may lead the researcher to a "consensus that is closer to the 'true' answer" (p. 271). Therefore, the researcher used the median of the participants' ratings for the definition statements to gain a better understanding of how literacy experts consider disciplinary literacy and disciplinary literacy in relation to content literacy.

For the third iteration questionnaire, the participants were presented with the median ratings, how they rated each item, their rationale statement for each item, and the summarized rationale statements. The summarized rationale statements were synthesized from the participants' rationale statements. The researcher summarized the submitted rationales into one summary rationale statement for each corresponding median rating. Participants were asked to review their ratings, the median ratings, and their rationale and the summary rationale statement for each definition statement. (Appendix E and Appendix F). The researcher then reviewed the participants' responses, coding the rationale statements and any additional commentary using process coding. Process coding was selected to capture the action in the participants' responses (Saldaña, 2011). As this Delphi study was based on the Dialectical IS in order to encourage participants to consider the views of other participants on the topic, the researcher used process coding to reflect the participants' interaction (Saldaña, 2013). Codes were then categorized and themes were developed.

Trustworthiness

When conducting qualitative research, the researcher has to ensure the participants' beliefs are captured and that data is analyzed and reported with integrity (Saldaña, 2011). For this study, the researcher utilized member checking to confirm data was reported as the

participants intended. Glesne (2011) described member checking as a form data validation that increases the trustworthiness of a research study. Birt, Scott, Cavers, Campbell, and Walter (2016) discussed the use of synthesized data during member checking. In this study, participants were provided with synthesized data and given an opportunity to clarify their thoughts. In doing so, participants were able to check that their thoughts and ideas were reflected as accurately as possible. Inherent to the Delphi study is the opportunity for member checking, as participants have the opportunity to read the summary statements and respond, clarifying their responses and providing additional commentary during each iteration.

The researcher used multiple methods of data analysis. Multiple data analysis is a form of data triangulation that adds to the rigor of the study (Humble, 2009). The first form of data analysis consisted of analyzing and synthesizing participant responses for the second and third iterations of the Delphi study. This included the development of disciplinary literacy definitions, disciplinary literacy and content literacy comparison statements, and summarized rationale statements. For the second method of data analysis the data was analyzed in two parts. The first phase used *a priori* codes based on a review of the literature. The second part examined similarities and differences of participants' descriptions of disciplinary literacy and content literacy. The third data analysis consisted of the researcher coding participants' rationales and comments using process coding to capture the interaction between the participants through their responses. In this way, the researcher could find the action in the participants' responses (Saldaña, 2013). Saldaña explained that process coding is appropriate for use when the researcher is searching for interaction and emotion.

Data Validation

Following the second analysis, an independent rater, a literacy professor at a Southeast Texas university, was provided with a brief explanation of the categories, based on the literature review of Moje's (2007) Disciplinary Literacy Theory and Fang's Approaches to Developing Content Area Literacies, and the participants' responses to interview questions one and two. (Appendix O). After the explanation, the independent rater was given two tables, one with Moje's (2007) Disciplinary Literacy categories and one table with Fang's (2012a) Approaches to Developing Content Area Literacies categories. The two tables were the same tables the researcher used in the analysis of the definition statements. The independent rater was given the participants' responses to questions for defining disciplinary literacy and comparing content literacy and disciplinary literacy and asked to place the definitions in the category that was most appropriate. Upon receipt of the independent rater's responses, the researcher calculated a Cohen's Kappa.

One premise of content analysis is that it is reproducible (Weber, 1990). Krippendorff (2004) explained that "agreement is what we measure; reliability is what we wish to infer from it" (p. 413). Further, Krippendorff explained that in seeking reliability, data is considered by another rater without knowledge of whether the data is correct. Krippendorff asserted the agreement coefficient is a form of reliability. The focus is on agreement and disagreement by coders. To measure the level of agreement for the two raters, the researcher used the Cohen's Kappa (κ). The Cohen's Kappa calculation shows the percentage of agreement between two raters and excludes chance agreement (Cohen, 1960). The Cohen's Kappa was calculated to determine if there was agreement between the researcher and independent rater on the categorization of data developed for this study. Prior to calculating the Kappa, the results of each rater were placed on agreement matrices as shown on Tables 1 and 2.

Table 1

Agreement Matrix for Moje's (2007) Disciplinary Literacy Theory

Participant Definition	1	2	3	4	5	6	7	8	9
Rater 1	b	b	b	b	d	b	b	a	d
Rater 2	b	a	b	b	c	b	c	a	d

Table 2

Agreement Matrix for Fang's (2012a) Approaches to Developing Content Area Literacies

Participant Definition	1	2	3	4	5	6	7	8	9
Rater 1	c	c	e	e	e	e	e	a	e
Rater 2	c	c	c	c	c	b	c	a	d

An interrater reliability test using the Cohen's Kappa (κ) statistic was performed to determine the agreement between the two raters. The information from the agreement matrices was used to calculate the Kappa in) software. The Kappa result can be interpreted as the following: "values ≤ 0 as indicating no agreement and 0.01–0.20 as none to slight, 0.21–0.40 as fair, 0.41– 0.60 as moderate, 0.61–0.80 as substantial, and 0.81–1.00 as almost perfect agreement" (McHugh, 2012, p. 279). The confidence interval (CI) was not calculated as there were nine comparisons. McHugh explained that small sample sizes result in a no agreement CI

and stated that sample sizes should not consist of less than 30 comparisons when calculating CI

(2012, p. 281).

Table 3

Contingency Table of Rater Agreement for Moje's (2007)
Disciplinary Literacy Theory

		Rater 1				
		1.00	2.00	3.00	4.00	Total
Rater 2	1.00	1	0	0	0	1
	2.00	1	4	1	0	6
	4.00	0	0	1	1	2
Total		2	4	2	1	9

Table 4

Kappa Symmetric of Rater Agreement for Moje's (2007) Disciplinary Literacy Theory

Symmetric Measures (N = 9)				
	Kappa Value	Standard Error	T	Sig.
Measure of Agreement	.49	.20	2.79	.005

For the rating of the data using Moje's (2007) Disciplinary Literacy Theory *a priori* codes, there was moderate agreement between the two raters, $\kappa = .49$, *P* = .005. The test was statistically significant.

Table 5

Contingency Table of Rater Agreement for Fang's (2012a)
Approaches to Developing Content Literacies

		Rater 1			
		1.00	3.00	5.00	Total
Rater 2	1.00	1	0	1	2
	3.00	0	2	4	6
	4.00	0	0	1	1
Total		1	2	6	9

Table 6

Kappa Symmetric of Rater Agreement for Fang's (2012a) Approaches to Developing
Content Area Literacies

Symmetric Measures (N = 9)				
	Kappa Value	Standard Error	T	Sig.
Measure of Agreement	.19	.12	1.92	.055

For the rating of data using Fang's (2012a) Approaches to Developing Content Area

Literacies, there was no agreement, $\kappa = .19$, $P = .06$. The test was not statistically significant.

The researcher did not expect to have this low level of agreement. McHugh (2012)

discussed issues with rater reliability when raters must make inferences regarding data, stating

that "when data collectors are required to make finer discriminations, reliability is much more

difficult to obtain" (p. 281). As the raters were having to infer the meaning of data and determine

the appropriate category for data, it is highly likely the two raters who have varying degrees of

knowledge about disciplinary literacy may have different interpretations of the data. The

researcher considered this and reviewed the data again to determine if changes in data

categorization were necessary. Glesne (2011) discussed the importance of reflexivity in

qualitative research. The act of critical reflection forced the researcher to consider the literature, positionality, and possible researcher bias. Based on a review of the literature and personal experience as a secondary literacy educator, the researcher determined that it was unnecessary to make changes. While the low level of agreement is disappointing, the results did prompt the researcher to look more closely at the data, how the data were coded, and how the data were interpreted. The low level of agreement further illustrates the gaps in understanding that exist in the literacy field among literacy experts and practitioners.

Ethical Considerations

Confidentiality was maintained throughout each of the iterations. Participants were numbered and each participant received an individual customized questionnaire for the second and third iteration using Google Forms. Once the response was received from each participant, the researcher changed the settings for the Google Form so that only the researcher and dissertation chair had access to the Google Form and participants' responses. At no time were participants able to access other participants' questionnaires or responses. Other procedures implemented to protect participants included providing participants with an informed consent letter (Appendix D) and the ability to conduct member checks to verify responses were accurate and reflected the participant's intent.

Summary of the Chapter

This study was an investigation of literacy experts' beliefs about disciplinary literacy in relation to content literacy, how literacy experts define disciplinary literacy, and what seminal works are identified in the field of disciplinary literacy. Participants' rationale statements were analyzed to determine what themes emerged in relation to the discussion of disciplinary literacy and disciplinary literacy as it relates to content literacy. Based on Moje's (2007) Disciplinary

Literacy Theory and Fang's (2012a) Approaches to Developing Content Area Literacies, the researcher explored the following research questions:

1. How do experts in the field of content area reading instruction define disciplinary literacy and describe it in relation to content area literacy?

2. What significant works in disciplinary literacy are noted by experts in the field of content area reading instruction and why are they noted as significant?

3. What commonalities emerge in the rationale provided by participants when identifying significant works for disciplinary literacy?

To collect data, the researcher utilized three questionnaires. Participants' responses were analyzed using multiple methods of analysis and an interrater reliability test, Cohen's Kappa, was conducted. As previously discussed, the researcher had to abandon the discussion on significant works as participants did not respond to this section of the questionnaire, gave little or no rationale for rankings, or did not follow instructions. In lieu of this, the researcher focused on the participants' rationale statements to determine the themes and patterns that emerged regarding the discussion of disciplinary literacy. This study's findings contribute to the discussion of disciplinary literacy and disciplinary literacy in relation to content literacy.

CHAPTER IV: FINDINGS

Organization of Chapter

This chapter reports on the findings of the data collected through a series of questionnaires in a Delphi study. The questionnaires were constructed to facilitate a conversation on disciplinary literacy which included a discussion on the participants' beliefs about disciplinary literacy and its juxtaposition to content literacy as well as a proposed list of significant works in the field of disciplinary literacy. The data was analyzed to find patterns and themes that emerged through the participants' discussion and review of information on disciplinary literacy. The chapter is divided as follows: summary of the participants, first iteration findings, further iteration findings, content analysis, and chapter summary.

Summary of Participants

As previously discussed, the expert panelists, hereafter referred to as the study's participants, are an integral part of a Delphi study. The participants in this study were invited to participate based on a review of the literature and recommendations from the dissertation committee and from the experts invited to participate in the study. Nine participants agreed to participate in the study. One participant declined to participate after the first round and a total of eight participants responded to all parts of the study. The list of participants, presented in alphabetical order, are as follows:

- Dr. Tom Bean
- Doug Buehl
- Dr. Douglas Fisher
- ReLeah Lent
- Dr. Maryann Mraz
- Dr. David O'Brien
- Dr. Evan Ortlieb
- Dr. Catherine Snow*
- Dr. Wolfram Verlaan

*-only participated in the first iteration

Each participant provided a unique perspective during the discussion on disciplinary literacy.
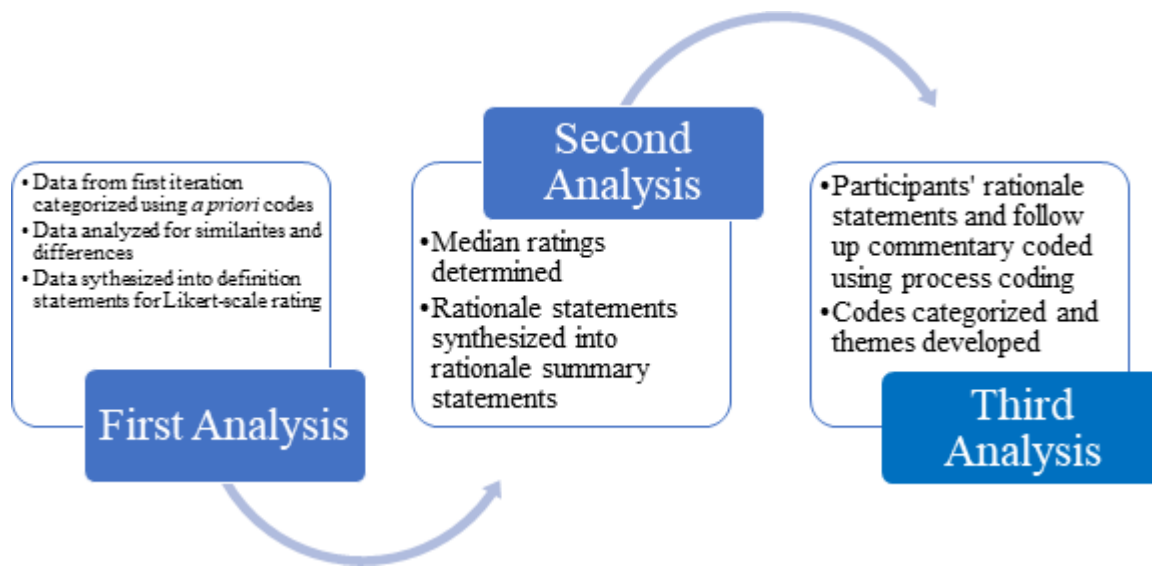
Figure 3. Phases of Data Analysis

First Iteration Findings

In the first iteration of the Delphi questionnaire, participants were asked to provide a definition for disciplinary literacy which addressed the first part of the research question--*How do experts in the field of content area reading instruction define disciplinary literacy and describe it in relation to content area literacy?* These responses were coded using categories established *a priori*. The *a priori* codes were based on Moje's (2007) disciplinary literacy theory and Fang's (2012a) description of approaches to content literacy instruction. See Tables 7 and 8, respectively. This set of data was analyzed first using the beliefs about disciplinary literacy posited by Moje and then analyzed a second time using Fang's approaches to content literacy development. Each participant's response was placed on the matrix (Tables 7 and 8). For the first analysis, each response was analyzed to determine if the response aligned with one of the beliefs

discussed by Moje. The same set of data was analyzed a second time to discover if the

definitions submitted by participants aligned with Fang's approaches to content literacy

development.

Table 7

Disciplinary Literacy Theory Categories (Moje, 2007)

Participant #	Cognitive Literacy Processes	Epistemological Processes of the Disciplines	Linguistic Processes of the Disciplines	Disciplinary Literacy as Cultural Navigation
100				
101				
102				
103				
104				
105				
106				
107				
108				

Table 8

Approaches to Developing Content Area Literacies (Fang, 2012a)

Participant #	Cognitive	Sociocultural	Linguistic	Critical	Does not align with an approach
100					
101					
102					
103					
104					
105					
106					
107					
108					

Moje's Disciplinary Literacy Theory

After placing participants' definitions of disciplinary literacy on Table 7, a pattern emerged in the beliefs of the participants regarding disciplinary literacy. See Appendix G for the placement of participants' responses on Table 7. While each of Moje's Disciplinary Literacy Theory categories was represented by participants' responses, six of the nine participants' responses aligned with one category. In the analysis of the data, subcategories emerged that illustrated participants' understanding of disciplinary literacy. These subcategories further illustrated participants' understanding of disciplinary literacy and its juxtaposition to content literacy.

Epistemological Processes of the Disciplines (Moje, 2007). Six of the nine participants' definitions aligned with Moje's discussion on the epistemological processes of a discipline. Moje

described three focus areas within the category of Epistemological Processes. The participants' responses reflected two of the focus areas Moje identified and are discussed as sub-categories in this analysis.

The first sub-category that emerged was Connection to the Traditions of the Discipline. In this sub-category, participants' proposed definitions for disciplinary literacy highlighted the importance of honoring a discipline's traditions in its literacy practices.

☐ Oral and written production and comprehension of the language forms and the epistemic commitments honored within different disciplines (Participant 100)

☐ The intersection of literacy processes and practices and disciplinary thinking with a focus on the texts and discourses of disciplines (Participant 101)

☐ Beyond generic metacognitive strategies (e.g., summarizing) to encompass the particular approaches to being or becoming literate in a discipline (Participant 102)

The participants' responses and specific use of words and phrases, such as "honored," "intersection of literacy processes and practices," "disciplinary thinking," and "being or becoming literate in a discipline," illustrated their belief that each discipline has traditions that are unique to that discipline. These traditions provide structure as to how disciplinary knowledge is communicated, discussed, and produced. These participants' responses align with Moje's discussion on how members of a discipline community think about their work and, in turn, the production of work that reflects their thinking.

The second subcategory was the Connection to Disciplinary Expertise. In this sub-category, participants' responses highlighted the importance that one should be able to work in a disciplinary study with the understanding of how an expert in the discipline utilizes various

literacy practices, such as reading, writing, and reasoning. Participants consistently used the word "expert" to describe their understanding of disciplinary literacy.

- Reading, writing, speaking, and listening specific to various professions or expert areas (Participant 103)

- Being able to assume the frame of mind or funds of knowledge related to learning as an expert in a topical field (Participant 105)

- Utilize discipline-specific literacy tools such as reading, writing, thinking, reasoning, and speaking to participate in the work of each subject area, much as experts might (Participant 106)

These responses underscored the participants' beliefs that the emphasis of a disciplinary study is related to expertise. Their belief about disciplinary literacy is associated with experiential knowledge. The participants' responses in the subcategory align with Moje's discussion of the epistemology processes of a discipline which addresses how the practices of a field of study connect to those who are studying in the discipline.

Disciplinary Literacy as Cultural Navigation (Moje, 2007). Two participants' responses aligned with Moje's discussion of disciplinary literacy regarding navigating cultural boundaries. Moje explained that disciplinary study that considers cultural boundaries places emphasis on interdisciplinary studies and considers students' funds of knowledge to guide learning experiences. Another aspect of disciplinary literacy as cultural navigation relates to the discourses of a discipline and a students' ability to navigate those discourses effectively. Participant responses emphasized the importance of knowing when to apply methods for understanding content and communicating their understanding. In order to do so, students of a discipline need to understand what the methods are and when and how to apply those methods.

Participant 104 stated that students need to have an "understanding [of] the shared methods of reading, writing, thinking, and reasoning as they are applied in each academic field." Participant 108's response emphasized the ability to utilize a discipline's literacy practices moving beyond the understanding of the discipline's content, but to consider how the discipline fits into the context of interdisciplinary studies.

- Disciplinary literacy equally involves building disciplinary knowledge, the "how" and "why" of a discipline's approach to knowledge and examination of our world. Disciplinary literacy instruction is undertaken in the service of acquiring disciplinary knowledge, insights, and practices, so that students expand their abilities to successfully interact with the wide range of disciplinary texts and communicate their understandings through speaking, writing, applying, and creating in ways that conform to disciplinary expectations. (Participant 108)

Participant 108 went on to describe disciplinary literacy as "not one compact set of highly skilled behaviors and routines, but many." This participant considered disciplinary literacy as more than a set of skills; that it is also a means to explore how disciplines relate to each other and allow a student to shape and communicate their own understanding of the discipline. The emphasis from both participant responses above is rooted in their beliefs that students of a discipline have an understanding of a discipline's practices beyond skills of reading and writing, with a particular emphasis on students' ability to create to show their understanding of a discipline's content and make connections to other disciplines.

Linguistic Processes of the Disciplines (Moje, 2007). One participant addressed the importance of learning the structure of a discipline's discourse, noting the importance of the

"comprehension of the language forms" (Participant 100). This participant acknowledged that each discipline communicates in a language that is unique and uses a unique structure.

Cognitive Literacy Processes (Moje, 2007). One participant noted the importance of cognitive strategies in disciplinary literacy development.

☐ The ability to employ those cognitive processes involved in the reading act that are required to comprehend discipline specific text to the extent necessary to accomplish specific goals (Participant 107)

Participant 107's response highlights the belief that disciplinary literacy is the application of cognitive strategies used to understand texts in any given discipline. Cognitive strategies are applied based on the needs of the reader when interacting with disciplinary texts.

Using *a priori* categories based on Moje's Disciplinary Literacy theory, each of the beliefs about disciplinary literacy was represented in the participants' disciplinary literacy definitions. In one category, Epistemological Processes, participants' responses emphasized two areas, noted as sub-categories, in the analysis of the data.

Fang's (2012a) Approaches to Developing Content Literacies

The same set of data was analyzed a second time using *a priori* categories based on Fang's Approaches to Developing Content Literacies (2012a). After placing definitions in categories on Table 8, patterns emerged that differed from those when Moje's categories regarding beliefs about disciplinary literacy were applied. See Appendix H for the placement of participants' responses on Table 8. Using Fang's categories for content literacy development, it was noted that many participants' responses did not reflect instructional practices discussed by Fang.

Linguistic Approach (Fang, 2012a). Two participants noted the importance of understanding how disciplinary texts are constructed and how to engage with a discipline's texts and discourses. Participant 100 described disciplinary literacy as the ability to comprehend "the language forms" and a discipline's "oral and written production." Participant 101 defined disciplinary literacy as a "focus on the texts and discourses of disciplines." Both participants' definitions aligned with the notion that one's understanding of disciplinary text is tied to an understanding of how a discipline's text is constructed, and the discourse used within a discipline.

Cognitive Approach (Fang, 2012a). One participant, 107, described disciplinary literacy in terms of one's "ability to employ cognitive processes." For this participant, using cognitive processes allows readers to access the information necessary to complete the reader's goals. The participant provided examples in various acts of reading, which included reading for "pleasure (e.g., reading a spy thriller), studying (e.g., understanding the differences between mitosis and meiosis), and reviewing an article submitted to a research journal."

Not aligned to an instructional approach. Six of the nine participants' responses did not align with the approaches of content literacy instruction as discussed by Fang. The definitions proposed by participants focused on understanding how experts in a discipline interact with text and how they communicate their understanding of content knowledge. In each of the examples, the participants emphasized expert level understanding of disciplinary literacy practices. One participant related this understanding as the "how" and "why" of the discipline.

☐ Particularities of various disciplines and the literacy practices relevant to those particularities (Participant 102)

79

☐ Reading, writing, speaking, and listening specific to various professions or expert areas (Participant 103)

☐ Skills and mind-set to think like the people in who work in their respective content areas (Participant 104)

☐ Being able to assume the frame of mind or funds of knowledge related to learning as an expert in a topical field (Participant 105)

☐ Utilize discipline-specific literacy tools such as reading, writing, thinking, reasoning, and speaking to participate in the work of each subject area, much as experts might (Participant 106)

☐ Reading, writing, and thinking through different disciplinary lenses (Participant 108)

• Learners need to appreciate the inner workings of a discipline—how experts within a discipline create, communicate, and share disciplinary knowledge (Participant 108)

☐ Communicate their understandings through speaking, writing, applying, and creating in ways that conform to disciplinary expectations (Participant 108)

These responses indicate that one would need to receive instruction on practices and skills that are associated with each discipline. This implies that instructional practices are not generic in nature and are related to experiential knowledge.

The two areas not supported by participants' responses were the sociocultural and critical approaches to content area literacy instruction. As discussed in previous chapters, the sociocultural approach as described by Fang (2012a) honors the knowledge students possess as they explore content area learning. The sociocultural approach emphasized incorporating a student's cultural practices to the study of a content area. The critical approach encourage students to look beneath the text to discover the values and intentions of the writer.

The participants' responses that did not align with any of the instructional approaches emphasized a level of understanding associated with experts in a discipline. The participants' disciplinary literacy definitions that align with Moje's epistemological processes of a discipline do not align with Fang's instructional approaches to content literacy development. As discussed in a previous chapter, Moje does address instructional practices that reflect the epistemological processes of a discipline; however, those practices were not reflected in Fang's review of the literature.

Content Literacy and Disciplinary Literacy

In the first iteration of the questionnaire, participants were asked to compare content literacy and disciplinary literacy. This question addressed the second part of the research question--*How do experts in the field of content area reading instruction define disciplinary literacy and describe it in relation to content area literacy?* A comparison chart was created to analyze how participants described disciplinary literacy and content literacy. Participant responses were analyzed using the descriptors on the following comparison chart.

Table 9

Content Literacy and Disciplinary Literacy Comparison Chart Categories

Content Literacy Descriptors	Content Literacy and Disciplinary Literacy Descriptors	Disciplinary Literacy Descriptors

See Appendix I for participants' complete responses and Appendix J for the comparison chart. The chart is divided into three categories. The first category, Content Literacy Descriptors, reflects the words and phrases participants used to describe content literacy. The second category, Content Literacy and Disciplinary Literacy Descriptors, reflects the words and phrases participants used to depict the commonalities of content literacy and disciplinary literacy. The

81

third category, Disciplinary Literacy Descriptors, reflects the words and phrases participants used to describe disciplinary literacy.

Content Literacy and Disciplinary Literacy Descriptors. In this category, four participants indicated that content literacy and disciplinary literacy "both use cognitive strategies to scaffold instruction." Participant 102 referred to Herber's work in functional content area reading (Herber, 1978). This participant elaborated that "disciplinary literacy practices, along with content area reading strategies would be helpful" to a student's learning in a discipline. The same participant went on to note "that [an] ongoing debate and discussion in this realm suggests that both dimensions are important." Participant 108 suggested that both content literacy and disciplinary literacy "grow students as literacy learners." While noting that content literacy and disciplinary literacy have attributes that distinguish one from the other, these four participants felt that there were similarities in how content literacy and disciplinary literacy function.

Content Literacy Descriptors. In the analysis of this category, two themes emerged from the words and phrases participants used to describe content literacy - comprehension development and strategy use.

For the theme "comprehension development," participants indicated content literacy serves the purpose of developing comprehension and is done primarily through the act of reading.

- Background development (Participant 100)
- Emphasizes understanding text (Participant 104)
- Sub-set of skills related to reading comprehension (Participant 105)
- Emphasizes the 'what' of the discipline (Participant 106)
- Focuses on reading and writing (Participant 106)

☐ Focus on comprehension in research (Participant 108)

Participants indicated that content literacy was associated with understanding text and content knowledge development. Participant 105 described content literacy as a "sub-set of skills" used for comprehending reading materials. Conversely, Participant 106 noted content literacy as focused on "reading and writing" and developed content knowledge, "the 'what' of the discipline." Participants considered content literacy as primarily associated with reading comprehension.

To develop the theme of strategy use, participants described content literacy as generic strategies used across disciplines. Participant 103 simply stated, "content literacy is more generic" in relation to disciplinary literacy. The descriptors indicate that participants associated content literacy with strategies to be used while interacting with any content materials.

☐ Imported into the discipline (Participant 101)

☐ Cognitive and metacognitive approaches applicable to various disciplines (Participant 102)

☐ Generic (Participant 103)

☐ Research-based learning strategies (Participant 104)

☐ Relies on teacher understanding of universal reading/writing skills and associated strategies (Participant 106)

☐ General strategies used where disciplines are similar (Participant 108)

☐ Emphasizes general literacy strategies/practices useful across disciplines (Participant 108)

Participant 106 explained that strategy usage relies on a teacher's understanding of the processes of reading and writing in order to know when to employ strategy instruction. The use of

strategies for this descriptor indicates that content literacy is general in nature and does not have the specificity of disciplinary literacy. Participant 101 described the use of these generic strategies as "imported into the discipline" as they are not created within a discipline. Rather, strategies are applied to content area texts and do not necessarily reflect the specific literacy practices of the discipline.

Disciplinary Literacy Descriptors. Within this category, three themes emerged from the participants' responses - specificity of disciplinary learning, practices of disciplinary literacy, and related to experience. In the "specificity of disciplinary learning" theme, participants explained that disciplines have "specific" and "unique" ways of processing and communicating content knowledge.

- ☐ Ways of talking and thinking in specific disciplines (Participant 100)
- ☐ Communicate with a specific knowledge area (Participant 103)
- ☐ Has unique approaches/methods to reading text which are unique to that discipline (Participant 107)

A discipline's unique attributes are not only associated with how one reasons and discusses content but are seen in the discipline's text structure. Participant 107 described disciplinary literacy in terms of the structure of the text, stating the "grammatical/lexical patterns differ between disciplines." This indicates that disciplinary learning requires learners to understand that each discipline has specific ways of acquiring content knowledge and in turn, demonstrate one's understanding of content knowledge through the discipline's unique discourses.

The theme "practices of disciplinary literacy" highlights how a student engages with the work in a discipline. Participant 101 explained that disciplinary literacy practices are "constructed from within the discipline" and are deeply connected to the "historical focus on

how texts, discourses, and learning intersect." Other participants' responses developed this further, stating that there is a "focus on [the] nature of the text, use of language, and how [to] communicate discipline knowledge" (Participant 108). Participant 104 made a connection to the "use of methods aligned with academic fields" that results in "using text authentically to replicate real-world practices." In doing so, these methods provide the basis for students to interact with disciplinary materials within the context of the field of study.

When describing disciplinary literacy, participants connected disciplinary literacy with experiential knowledge. Their responses developed the theme "forms of experience in disciplinary literacy." While Participant 105 described disciplinary literacy as "learn[ing] as an expert in the field," another participant indicated there were forms of expertise in the study of a discipline. Participant 106 provided numerous descriptors for disciplinary literacy when considered in juxtaposition to content literacy.

- Emphasizes the "how" of the discipline
- More emphasis on student autonomy in selecting appropriate tools and strategies
- Requires teacher expertise and understanding of the discipline

To learn as an expert in the field requires an understanding of how texts are constructed and how knowledge is communicated within the discipline. For a teacher to engage students, the teacher would need a deep understanding of the discipline and then teach the necessary strategies. As a student develops their own expertise of the discipline, the student can choose strategies as needed. Expertise is transferred from teacher to student. Experience describes more than the "think like a…" or "learn like a…" idea often used to describe disciplinary literacy. Expertise is attributed to the teacher in a discipline and to the students who are growing in a discipline.

Significant Works

85

Participants were asked to identify the significant works in the field of disciplinary literacy and what attributes make those works significant. The responses to this question attempted to answer the research questions - *What significant works in disciplinary literacy are noted by experts in the field of content area reading instruction and why are they noted as significant?* and *What commonalities emerge in the rationale provided by participants when identifying significant works for disciplinary literacy?* See Appendix K for participants' complete responses. In some instances, participants provided author names stating "anything by…" followed by the author's name. In this case, the researcher contributed titles that were considered in a review of the literature (see Literature Review). Participants were asked to review the list and add any works they believed to be omitted.

The following is the list of works was developed from participants' responses:

Alvermann, D. E. (2002). Effective literacy instruction for adolescents. *Journal of literacy Research, 34*(2), 189-208. doi: 10.1207/s15548430jlr3402_4

Alvermann, D. E., & Moore, D. W. (1991). Secondary school reading. In R. Barr, M.L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.). *Handbook of reading research*, *2*, 951 983. Mahwah, NJ:Lawrence Erlbaum Associates.

Brozo, W., Moorman, G., Myer, C. K., & Stewart, T. T. (2013). Content-area reading and disciplinary literacy: A case for the radical center. *Journal of Adolescent & Adult Literacy, 56*(5), 353-357. doi: 10.1002/JAAL.153

Buehl, D. (2017). *Developing readers in the academic disciplines*. Portland, ME:Stenhouse Publishers.

Conley, M. W. (2008). Cognitive strategy instruction for adolescents: What we know about the

promise, what we don't know about the potential. *Harvard Educational Review*, 78(1), 84-106. doi: 10.17763/haer.78.1.j612282134673638

Dobbs, C.L., Ippolito, J., & Charner-Laird, M. (2017). *Investigating disciplinary literacy: A framework for collaborative professional learning*. Cambridge, MA: Harvard Education Press.

Draper, R. J., & Broomhead, G. P. (Eds.). (2010). *(Re)imagining content-area literacy instruction*. New York, NY:Teachers College Press.

Dunkerly-Bean, J., & Bean, T. W. (2016). Missing the savoir for the connaisance: Disciplinary and content area literacy as regimes of truth. *Journal of Literacy Research, 48*(4), 448-475. doi: 10.1177/1086296X16674988

Faggella-Luby, M.N., Graner, P.S., Deschler, D.D., & Drew, S.V. (2012). Building a house on sand: Why disciplinary literacy is not sufficient to replace general strategies for adolescent learners who struggle. *Topics in Language Disorders, 32*(1), 69–84. doi: 10.1097/TLD.0b013e318245618e

Fang, Z. (2012). Language correlates of disciplinary literacy. *Topics in Language Disorders, 32*(1), 19-34. doi: 10.1097/TLD.0b013e31824501de

Fang, Z., & Schleppegrell, M.J. (2010). Disciplinary literacies across content areas: Supporting secondary reading through functional language analysis. *Journal of Adolescent & Adult Literacy, 53*(7), 587–597. doi: 10.1598/JAAL.53.7.6

Fisher, D., & Ivey, G. (2005). Literacy and language as learning in content-area classes: A departure from "every teacher a teacher of reading." *Action in Teacher Education, 27*(2), 3-11.

Grant, M. C., Fisher, D., & Lapp, D. (2015). *Reading and writing in science: Tools to develop*

disciplinary literacy. Thousands Oak, CA: Corwin Press.

Heller, R., & Greenleaf, C. L. (2007). *Literacy instruction in the content areas: Getting to the core of middle and high school improvement*. Alliance for Excellent Education.

Herber, H. L. (1978). *Teaching reading in content areas*. Upper Saddle River, NJ: Prentice Hall.

Herber, H. L., & Sanders, P. L. (Eds.). (1969). *Research in reading in the content areas: First year report*. Syracuse University.

Lee, C.D., & Spratley, A. (2010). *Reading in the disciplines: The challenges of adolescent literacy*. New York, NY: Carnegie Corporation of New York.

Lent, R. C. (2015). *This is disciplinary literacy: Reading, writing, thinking, and doing... content area by content area*. Thousand Oaks, CA: Corwin.

McConachie, S. M., & Petrosky, A. R. (Eds.). (2009). Content matters: A disciplinary literacy approach to improving student learning. San Francisco, CA:John Wiley & Sons.

Moje, E. B. (2007). Developing socially just subject-matter instruction: A review of the literature on disciplinary literacy teaching. *Review of research in education, 31*(1), 1-44.

Moje, E.B. (2008). Foregrounding the disciplines in secondary literacy teaching and learning: A call for change. *Journal of Adolescent & Adult Literacy, 52*(2), 96–107.

Moje, E. B. (2015). Doing and teaching disciplinary literacy with adolescent learners: A social and cultural enterprise. *Harvard Educational Review, 85*(2), 254-278,301. doi: 10.17763/0017-8055.85.2.254

Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content area literacy. *Harvard Educational Review, 78*(1), 40–59.

Shanahan, T., & Shanahan, C. (2012). What is disciplinary literacy and why does it matter?

Topics in Language Disorders, 32(1), 7–18. doi: 10.1097/TLD.0b013e318244557a

Snow, C. & Moje, E. (2010). Why is everyone talking about adolescent literacy? *The Phi Delta Kappan, 91*(6), 66-69. doi: 10.1177/003172171009100616

Vacca, R. T., Vacca, J. A. L., & Mraz, M. E. (2005). *Content area reading: Literacy and learning across the curriculum*. Boston, MA: Pearson.

Wilson-Lopez, A., & Bean, T. W. (in press). *Content area and disciplinary literacy: Strategies and frameworks*. International Literacy Association, Dec. 18, 2017.

Wineburg, S. (2001). *Historical thinking and other unnatural acts: Charting the future of teaching the past*. Temple University Press.

Zygouris-Coe, V. (2012). Disciplinary literacy and the common core state standards. *Topics in Language Disorders, 32*(1), 35-50. doi: 10.1097/TLD.0b013e31824561a2

Zygouris-Coe, V. I. (2014). *Teaching discipline-specific literacies in grades 6-12: Preparing students for college, career, and workforce demands*. New York, NY: Routledge.

After reviewing the information provided by participants, it became evident to the researcher that not all participants were willing to commit to a list of significant works. Based on the responses from the first iteration, a list of proposed works was given to the participants to review. Participants were asked to rate their top ten works with one (1) being the work they considered to be the most significant. Participants were also asked to provide a rationale for their top three ranked titles. At this point, one participant declined to participate further in the study and another participant, Participant 104, declined to rank the works presented. Participant 104 felt strongly that creating such a list would not further the discussion on disciplinary literacy.

☐ I don't believe there is one "top work" in this field, nor do I believe these can be rank ordered in terms of most or least significant. Each of the works cited makes an important

contribution to the field of content literacy/disciplinary literacy. No single work captures

all of the details and nuances of this field. The significance depends on the purpose of the

reader and the intended application of the information contained in each publication

(Participant 104)

Participant 105 did not rank the works as per the directions but instead elected to give a ranking

to more than ten titles. The participant ranked multiple titles as 1, 2, 3, etc. When asked to review

the directions and the way the participant ranked the titles, Participant 105 made no changes and

did not provide a rationale for ranking in such a manner.

In the tables that follow, the proposed list of works was placed into four groups for

discussion. Due to a lack of responses from participants, discussion regarding the works

presented in the tables is limited. In Table 10, the participants' ranking are shown for the top two

titles, which were titles that were ranked five times by participants.

Table 10

Works Ranked Five Times by Participants

Proposed Work	101	102	103	104	105	106	107	108	# of times ranked
Draper, R. J., & Broomhead, G. P. (Eds.). (2010). *(Re)imagining content-area literacy instruction.* New York, NY: Teachers College Press.	7	8			8		5	9	5
Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content area literacy. *Harvard Educational Review, 78*(1), 40–59.	6		1		2	6		1	5

When reviewing at the top two ranked titles, one title, Draper and Broomhead's

(Re)imagining Content-Area Literacy Instruction (2010), was not ranked in the top three by any

of the participants; therefore, the work has no commentary for analysis as to why it would be considered a significant work. However, for the work to be ranked by five of the eight participants indicates that it has had an impact on the participants' thinking in regard to disciplinary literacy.

The other top-ranked title, *Teaching Disciplinary Literacy to Adolescents: Rethinking Content Area Literacy* (2008) by Shanahan and Shanahan, was ranked number one by two participants and number two by one participant; therefore, the participants who ranked this work in the top three, considered the work to be influential. Participant 108 stated that this work is "one of the most cited articles in the last decade." Participant 103 expressed a similar reason for placing the title in the top three explaining the work was "used the most." Further, Participant 108 explained that "their model for disciplinary literacy is widely admired and used" and even felt that Shanahan and Shahanan's work was "widely influential and was important for the inclusion of disciplinary literacy in the Common Core literacy standards." Participant 108 clearly felt that this work had been influential in the field of disciplinary literacy.

Like the top two ranked works, the five works that were ranked four times by participants received various levels of consideration. In Table 11, the titles that were ranked four times are shown.

Table 11

Works Ranked Four Times by Participants

Proposed Work	101	102	103	104	105	106	107	108	# of times ranked
Fang, Z., & Schleppegrell, M.J. (2010). Disciplinary literacies across content areas: Supporting secondary reading through functional language analysis. *Journal of Adolescent & Adult Literacy, 53*(7), 587–597.	4				3		7	7	4
Heller, R., & Greenleaf, C. L. (2007). *Literacy instruction in the content areas: Getting to the core of middle and high school improvement.* Alliance for Excellent Education.	8				8		3	5	4
Herber, H. L. (1978). *Teaching reading in content areas.* Upper Saddle River, NJ: Prentice Hall.	2	2			7			10	4
Moje, E.B. (2008). Foregrounding the disciplines in secondary literacy teaching and learning: A call for change. *Journal of Adolescent & Adult Literacy, 52*(2), 96–107.	2	5			2			4	4
Shanahan, T., & Shanahan, C. (2012). What is disciplinary literacy and why does it matter? *Topics in Language Disorders, 32*(1), 7–18.	7		2		5	5		Not in my top 10	4

Herber's 1978 publication, *Teaching Reading in Content Areas*, is considered a seminal work in the field of content area instruction. Yet, it was considered by two of the participants to be a significant work in the field of disciplinary literacy. Participant 102 explained that the rationale for ranking this text was to "acknowledge the deep roots of research at Syracuse University in content area literacy from the 1970s to the present."

Participant 101 expressed the value of Fang's and Moje's works to "my thinking" and is the "most theoretically articulate and most forward thinking." Participant 106 indicated that Moje's contribution to the discussion on disciplinary literacy was significant. Participant 106

explained that "Moje has done more than any other researcher to help identify disciplinary literacy and how it differs from content-area literacy." Further, the participant stated that "her emphasis on participating in the disciplines, which includes construction of knowledge and challenging knowledge is essential." In regard to Heller and Greenleaf's work, Participant 107 rated this title as a top three choice because it provided detailed information on the use of content literacy practices.

Fang has several publications that were acknowledged by participants. Participant 108 felt Fang's works and the work he had one with Schleppergrell has had a significant impact on the discussion of disciplinary literacy. Their work on functional language analysis "underscores how different disciplines organize and communicate their knowledge." Participant 108 discussed the importance of their findings to the work of teachers, stating, "teachers of a discipline can readily see [how] different, and sometimes distinct, their disciplinary texts are." Specifically, Participant 108 argued that Fang's work illustrated the need for content teachers to have a definitive role in the development of their students' learning. This participant said, "Fang's work provides a powerful rationale that disciplinary teachers must take ownership of the development of literacy learners in their fields."

The following tables show the works that were ranked three or fewer times.

Table 12

Works Ranked Three Times by Participants

Proposed Work	101	102	103	104	105	106	107	108	# of times ranked
Buehl, D. (2017). *Developing readers in the academic disciplines.* Portland, ME: Stenhouse Publishers.	Not in my top 10				4		6	6	3
Conley, M. W. (2008). Cognitive strategy instruction for adolescents: What we know about the promise, what we don't know about the potential. *Harvard Educational Review, 78*(1), 84-106.	Not in my top 10				8		3	8	3
Dobbs, C.L., Ippolito, J., & Charner-Laird, M. (2017). *Investigating Disciplinary Literacy: A Framework for Collaborative Professional Learning.* Cambridge, MA: Harvard Education Press.	Not in my top 10		7		3	8		Not in my top 10	3
Dunkerly-Bean, J., & Bean, T. W. (2016). Missing the savoir for the connaisance: Disciplinary and content area literacy as regimes of truth. *Journal of Literacy Research, 48*(4), 448-475.	Not in my top 10	1			9		4	Not in my top 10	3
Fang, Z. (2012). Language correlates of disciplinary literacy. *Topics in Language Disorders, 32*(1), 19-34.	5						8	2	3
Lee, C.D., & Spratley, A. (2010). *Reading in the disciplines: The challenges of adolescent literacy.* New York, NY: Carnegie Corporation of New York.	Not in my top 10		3		9			3	3
Lent, R. C. (2015). *This is disciplinary literacy: Reading, writing, thinking, and doing... content area by content area.* Thousand Oaks, CA: Corwin.	Not in my top 10		6		6	3		Not in my top 10	3

Proposed Work	101	102	103	104	105	106	107	108	# of times ranked
Moje, E. B. (2015). Doing and teaching disciplinary literacy with adolescent learners: A social and cultural enterprise. *Harvard Educational Review, 85*(2), 254-278,301.	1	4				2		Not in my top 10	3
Wineburg, S. (2001). *Historical thinking and other unnatural acts: Charting the future of teaching the past.* Temple University Press.	3	7			2			Not in my top 10	3

Participant 106 explained that Lent's publication is useful for educators "which is important in making the shift in schools." Participant 106 went on to describe the publication as offering "ideas to practitioners." Participant 108 cited *Reading in the Disciplines: The Challenges of Adolescent Literacy* (2010) as significant because it is "a powerful advocacy document that helped to change thinking and practice in disciplinary classrooms" and addressed Common Core and disciplinary literacy that resulted in "professional development initiatives."

Table 13

Works Ranked Two or Fewer Times by Participants

Proposed Work	101	102	103	104	105	106	107	108	# of times ranked
Alvermann, D. E. (2002). Effective literacy instruction for adolescents. *Journal of literacy Research, 34*(2), 189-208.	6				5			Not in my top 10	2
Alvermann, D. E., & Moore, D. W. (1991). Secondary school reading. In R. Barr, M.L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.). *Handbook of reading research, volume 2* (951-983). Mahwah, NJ: Lawrence Erlbaum Associates.	7				6			Not in my top 10	2

Reference									
Brozo, W., Moorman, G., Myer, C. K., & Stewart, T. T. (2013). Content-area reading and disciplinary literacy: A case for the radical center. *Journal of Adolescent & Adult Literacy, 56*(5), 353-357.	Not in my top 10				7		1	Not in my top 10	2
Faggella-Luby, M.N., Graner, P.S., Deschler, D.D., & Drew, S.V. (2012). Building a house on sand: Why disciplinary literacy is not sufficient to replace general strategies for adolescent learners who struggle. *Topics in Language Disorders, 32*(1), 69–84.	Not in my top 10				2		2	Not in my top 10	2
Fisher, D., & Ivey, G. (2005). Literacy and language as learning in content-area classes: A departure from "Every teacher a teacher of reading". *Action in Teacher Education, 27*(2), 3-11.	Not in my top 10		5		1			Not in my top 10	2
Grant, M. C., Fisher, D., & Lapp, D. (2015). *Reading and writing in science: Tools to develop disciplinary literacy*. Thousands Oak, CA: Corwin Press.	Not in my top 10		4		2			Not in my top 10	2
Herber, H. L., & Sanders, P. L. (Eds.). (1969). *Research in reading in the content areas: First year report*. Syracuse University.	Not in my top 10	3			5			Not in my top 10	2
McConachie, S. M., & Petrosky, A. R. (Eds.). (2009). *Content matters: A disciplinary literacy approach to improving student learning*. San Francisco, CA: John Wiley & Sons.	Not in my top 10				8	4		Not in my top 10	2
Moje, E. B. (2007). Chapter 1 Developing socially just subject-matter instruction: A review of the literature on disciplinary literacy teaching. *Review of research in education, 31*(1), 1-44.	2						1	Not in my top 10	2
Snow, C. & Moje, E. (2010). Why is everyone talking about adolescent literacy? *The Phi Delta Kappan, 91*(6), 66-69.	4				4			Not in my top 10	2

Reference									
Vacca, R. T., Vacca, J. A. L., & Mraz, M. E. (2005). *Content area reading: Literacy and learning across the curriculum*. Boston, MA: Pearson.	5			4			Not in my top 10	2
Wilson-Lopez, A., & Bean, T. W. (in press). Content area and disciplinary literacy: Strategies and frameworks. International Literacy Association, Dec. 18, 2017	Not in my top 10	6		3			Not in my top 10	2
Zygouris-Coe, V. I. (2014). *Teaching discipline-specific literacies in grades 6-12: Preparing students for college, career, and workforce demands*. New York, NY: Routledge.	Not in my top 10			2	7		Not in my top 10	2
Zygouris-Coe, V. (2012). Disciplinary literacy and the common core state standards. *Topics in Language Disorders, 32*(1), 35-50.	Not in my top 10			3			Not in my top 10	1

Participant 107 ranked the Brozo et al. title (2013) with a one (1), citing how the publication illustrated the "false dichotomy between content and disciplinary literacy." This participant went on to justify the ranking of the Fagella-Luby et al. publication (2012) of a two (2) because of its reporting of research that discusses the "applicability of generic reading strategy instruction" to support struggling readers.

Participants were given an opportunity to add titles they felt may have been overlooked. Participant 104 wanted to make sure that the Vacca, Vacca, and Mraz (2005) book, *Content Area Reading: Literacy and Learning across the Curriculum* was the tenth edition considered by the participants. Participant 101 added O'Brien, Stewart, and Moje's *Why Content Literacy is Difficult to Infuse into the Secondary School* (1995). The participant explained that while it is an older publication it is a "foundational piece that bridges content literacy and disciplinary literacy."

The researcher did not pursue this avenue of research further as the participants showed limited interest in contributing to this part of the study. Since the discussion over the summary statements provided a rich data source, the second iteration of the Delphi questionnaire focused on the discussion over content literacy and disciplinary literacy.

Further Iterations Findings

For the second iteration, the data provided in the first iteration of the questionnaire was synthesized to form definition statements and comparison statements for the second questionnaire. Participants were asked to review the statements regarding disciplinary literacy and content literacy and then rate the definition statements using the following scale: Strongly Agree (1) - Strongly Disagree (5). After rating, participants were asked to provide a rationale for their ratings. Participants' rationale statements were synthesized in one rationale to explain each median rating. For the third iteration, participants were asked to review their own ratings and rationale statements, the median ratings, and the rationale summary statements. Participants had the opportunity to review their ratings and rationale statements to ensure the responses accurately reflected their thoughts regarding disciplinary literacy. If not, they were able to change their ratings and provide clarifying information. Further, participants were asked to provide additional thoughts regarding the summary rationale statements. A content analysis was conducted on the participants' rationale statements, to be discussed later in this chapter.

Participants' final ratings and the median rating for each disciplinary literacy definition statement were analyzed. Table 14 shows how each participant rated the definition statements and the median rating for each statement.

Table 14

Participants' Rankings for Disciplinary Literacy Definition Statements

Definition Statement	101	102	103	104	105	106	107	108	Median
Disciplinary literacy moves beyond knowing the 'what' of disciplinary knowledge to the 'how' and 'why' - an understanding of how and why experts in a field of study create, communicate, and share disciplinary knowledge, which enables students to navigate a wide range of disciplinary texts.	2	1	3	2	2	1	3	5	2
Disciplinary literacy moves beyond generic metacognitive strategies to utilize the particular approaches needed to be or become literate in a discipline.	2	1	1	2	2	2	3	4	2
Disciplinary literacy is the intersection of the literacy practices, the utilized language forms, and the epistemology of the discipline.	2	1	2	2	5	4	3	3	2.5
Disciplinary literacy is the use of discipline-specific literacy tools (reading, writing, speaking, listening, and reasoning) used by experts in order to participate in a subject area.	3	3	1	3	1	1	3	4	3
Disciplinary literacy is the strategic use of cognitive processes required to understand discipline-specific texts.	4	3	1	3	2	4	2	3	3

*-The underlined number represents a participant's change in rating from the second iteration.

Two definition statements had a median rating of 2, which indicates that participants agreed with the definitions. The first definition considers disciplinary literacy as more than processes or strategies applied during the study of a discipline. This definition describes disciplinary literacy practices in terms of having a deep understanding of the rationale behind literacy practices used in a discipline. Another aspect of this definition is the application of one's deep understanding of a discipline to the study of other disciplines. The second definition considers the approaches that have been recognized by a discipline as the means to disciplinary literacy. Both definitions reject the use of "generic" strategies.

The statement with a median rating of 2.5, indicating that the participants expressed some agreement with the definition, explicitly calls attention to the epistemology of the discipline and

its discourses. This definition establishes disciplinary literacy as a combination of different beliefs discussed in Moje's Disciplinary Literacy Theory; the definition recognizes traditions, linguistic forms, and practices of a discipline.

Two definition statements had a median rating of 3, which indicates that participants were neutral (neither agreeing or disagreeing). The resulting median rating seemed to indicate that participants associated disciplinary literacy with the use of processes or literacy tools for understanding and production of disciplinary knowledge. In these definitions, there is not a recognition of the underlying understanding of how and why practices are used for the understanding and communication of disciplinary knowledge.

All of the median ratings were near the mid-range on the rating scale. Since all of the proposed definitions were near the midpoint, none of the definitions can be eliminated nor can a definition be adopted. It is noted that all of the proposed definitions received a rating of one, "strongly agree," from one or more participants. However, the overall median ratings indicate there is not a singular understanding of the definition of disciplinary literacy supporting the beliefs about disciplinary literacy posited by Moje (2007).

In the second part of the questionnaire, participants were asked to consider statements that compared content literacy to disciplinary literacy. As with the disciplinary literacy definition statements, participants rated the comparison statements using the following scale: Strongly Agree (1) - Strongly Disagree (5). The same process was followed as explained earlier in this section. Table 15 shows the participants' ratings and the median ratings for each comparison statement.

Table 15

Participants' Rankings for Content Literacy and Disciplinary Literacy Comparison Statements

Definition Statement	101	102	103	104	105	106	107	108	Median
Content literacy is a set of skills applied to understand content while disciplinary literacy is a set of skills constructed within the discipline reflecting the discipline's texts, discourses, and epistemology.	<u>3</u>	1	1	3	4	2	4	2	2.5
Both content literacy and disciplinary literacy use cognitive strategies for instruction. Disciplinary literacy processes are created within a discipline and content literacy processes are applied to a discipline.	2	3	2	4	3	<u>2</u>	4	2	2.5
Content literacy refers to general literacy strategies used to support the development of background knowledge and content learning. Disciplinary literacy refers to specific literacy strategies and practices of a field of study.	2	3	2	2	4	3	2	5	2.5
Content literacy emphasizes understanding text. Disciplinary literacy extends content literacy so that texts may be used authentically for real world application.	5	<u>3</u>	5	4	4	4	5	4	4

*-The underlined number represents a participant's change in rating from the second iteration.

Participants used both terms, *skills* and *strategies*, in reference to content literacy and disciplinary literacy. For this analysis, both terms are used when discussing the data to honor the language used by the participants. Three of the four comparison statements received a median rating of 2.5. When analyzing these statements, both content literacy and disciplinary literacy included the use of *strategies* or *skills*. One distinction made between content literacy and disciplinary literacy is that disciplinary literacy strategies or skills are related to how knowledge is constructed as evidenced by phrasing, such as "development background knowledge" and "understand content." One of the statements specifically notes that "strategies" are an

instructional practice and are not connected to how the strategies are used when studying a discipline. In all of the comparison statements that received a 2.5 median rating, strategies or skills associated with content literacy are considered to be constructed outside the discipline. In one statement, content literacy strategies were considered support mechanisms. So while content literacy strategies or skills are considered useful to studying a discipline, they are situated outside the discipline.

The comparison statement that had a median rating of 4 described both content literacy and disciplinary literacy in relation to texts. In this statement, content literacy is connected to reading comprehension while disciplinary literacy is related to how those texts are used during the course of study. Disciplinary literacy is considered an application of text comprehension to discipline-specific activities that authentically reflect the discipline's practices.

Content Analysis Findings

For the third iteration, the researcher summarized rationale statements and presented the participants' initial rating and rating rationale, the median rating, and a summary rationale statement for each descriptive statement to participants. Participants reviewed the rating, their rationale statement, and the summary rationale statement and responded with additional thoughts these data points generated. The researcher coded and analyzed the participants' rationale statements and additional responses. As previously explained in this chapter, the rationales provided for the significant works portion of the questionnaire were included in this analysis.

From the coded data of the participants' responses about disciplinary literacy, five categories emerged - Noting the Juxtaposition of Literacy and Discipline Expectations, Describing Disciplinary Literacy Development, Expressing Beliefs about Disciplinary Literacy, Seeking Clarity of Definition, and Needing Clarity of Implementation. The coded data from the

participants' responses about content literacy, in comparison to disciplinary literacy, developed

five categories: Expressing Beliefs about an Existing Dichotomy, Expressing Beliefs about

Instructional Practices, Conflicting Beliefs, Noting Factors that Affect Beliefs, and Needing
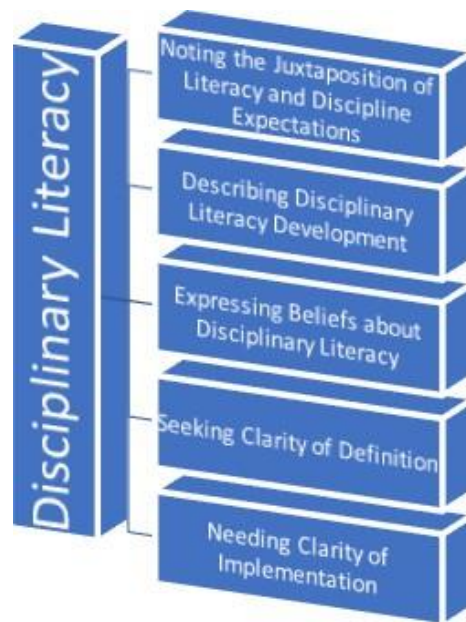
Clarity of Implementation.

Figure 3. Categories Developed from Content Analysis

Figure 4. Categories Developed from Content Analysis

The researcher categorized the coded data. After reviewing the categories, patterns in the data emerged, and the researcher grouped the categories into themes. The three themes that emerged were: Understanding Disciplinary Literacy, Beliefs about Literacy Instruction, and Seeking Clarity. These themes will be explained below.
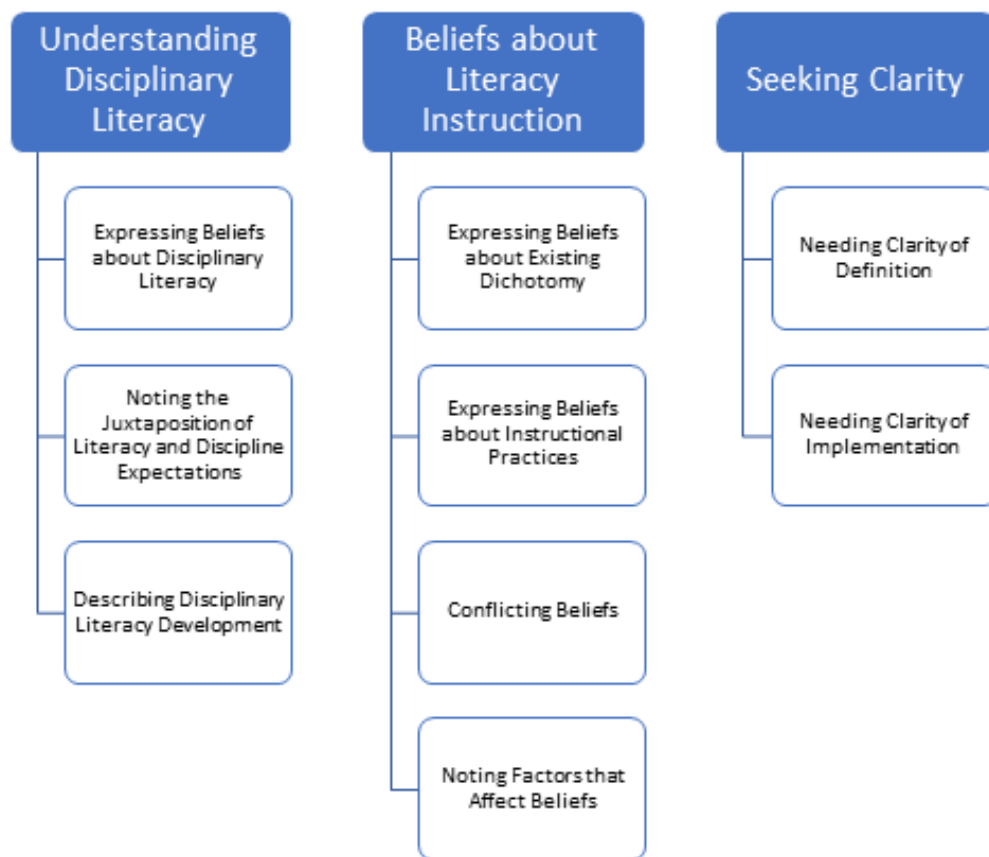

Figure 5. Themes Developed from Categories

Understanding Disciplinary Literacy

The theme Understanding Disciplinary Literacy is comprised of three categories of data. In this theme, participants' responses revealed different aspects of their understanding of disciplinary literacy. The rationale statements noted a wide variety of beliefs about disciplinary literacy. The beliefs ranged from the use of strategies in meaningful ways in any discipline to recognizing the uniqueness of a discipline and how one works within a discipline.

One aspect of the participants' beliefs about disciplinary literacy connected to Herber's work (1978) in content reading instruction and cognitive research (Herber, 1969). Herber discussed the use of cognitive strategies to process discipline-specific information and recognized the teacher as the expert in the content who determined the process for students to access and retain content information. This belief was evident in participants' responses. Participant 108 recognized the use of general literacy practices in conjunction with "disciplinary-specific variations in their study and communication of a discipline." Two participants discussed that cognitive processes were a part of disciplinary literacy. Participant 106 explained that cognitive processes were used as was appropriate for the "participation in the disciplines." Participant 101 stated, "most of the models of disciplinary literacy have cognitive components." Participant 103 noted the value of metacognitive strategies used in the study of discipline content. This participant responded that the use of metacognitive strategies should not be undervalued, indicating that the use of metacognitive strategies should not be abandoned when defining disciplinary literacy. As reflected in Shanahan and Shanahan's (2008) research of disciplinary literacy, Participant 108 believed that content literacy should be foundational to any definition of disciplinary literacy.

Other responses indicated a belief that disciplinary literacy reflects the unique aspects of a discipline that require readers to go beyond the use of generic cognitive strategies. Participant 102 explained that "each discipline has particular ways of addressing content" that one needs to know in order to "enter the particular worlds and discourses of each discipline." Each discipline has practices that are unique and "even within a discipline there is a range of skills" (Participant 105) needed to interact with texts. To understand the how and the why of a discipline, Participant 105 postulated that "discipline specific thinking" would be required. Similarly, Participant 107

felt that "certain disciplines require unique cognitive processes" in order to understand discipline-specific texts.

Another aspect of disciplinary literacy that relates to the uniqueness of a discipline is the notion of thinking like an expert in the discipline. Participant 102 posited the value of problem-based learning experiences to engage learners in understanding the 'how' and 'why' of a discipline. Having a deeper understanding of a discipline allows a student to live "the life of one in the field" (Participant 105). Participant 106 felt strongly that the act of creating needed to be included in any definition for disciplinary literacy, stating that "the inclusion of 'create' makes" the definition valid." Participant 106 believed that disciplinary literacy is the practice of thinking and creating like an expert in the discipline.

Other participants felt that there are misconceptions about disciplinary literacy. Participant 108 described disciplinary literacy as more than "knowing what people in a discipline know which is often encountered in school settings." The participant went on to describe disciplinary literacy as more than building knowledge. Participant 105 did not agree with the notion that there is one set of beliefs for a discipline and explained that a discipline may have multiple epistemologies that "guide content consumption."

Beliefs about Literacy Instruction

The theme, Beliefs about Literacy Instruction, is comprised of data that reflects a wide range of beliefs about content and disciplinary literacy instruction. These beliefs encompassed concerns about an existing dichotomy between content literacy and disciplinary literacy, instructional practices, and factors that affect beliefs about literacy instruction.

Two participants felt there was a false dichotomy between content literacy and disciplinary literacy. Participant 101 expressed concern that too much emphasis was being

placed on the differences between disciplinary literacy and content literacy when the practices

deriving from both are beneficial to readers. This participant also stated that "disciplinary

literacy, in addition to focusing on very specific sets of practices developed within a discipline,

can also benefit from more 'generic' cognitive strategies." Participated 101 elaborated further on

generic cognitive strategies, explaining that readers "should be able to monitor for

comprehension, generate inferences, synthesize important gist[s] from texts, whether reading in

history or biology." This participant noted that the use of disciplinary-specific practices was

more evident in "the process and practices in producing" content knowledge. Participant 108

expressed concern that there is an "interpretation that content literacy and disciplinary literacy

are somewhat totally separate things rather than integrated." This participant "sees them [content

literacy and disciplinary literacy] as melding together in practice." Participant 104 emphasized

the similarities between disciplinary literacy and content literacy, noting that "both content and

disciplinary literacy relate to understanding authentic texts." This participant explained

"disciplinary literacy processes and content literacy processes can both be applied to a

discipline."

One participant indicated that there was a contrast between disciplinary literacy and

content literacy regarding skills. Participant 103 agreed with the notion that content literacy is

skills applied to understand content while disciplinary literacy is skills created within the

discipline. The participant described this statement as a "good comparison" in the discussion of

how content literacy is positioned regarding disciplinary literacy. Conversely, Participant 104 did

not believe that "in practice, there is a significant differen[ce] between the two terms 'content

literacy' and 'disciplinary literacy'." The differences are only based on theory. For Participant

104, theory and practice do not align. When considering disciplinary literacy processes as

created within a discipline and content literacy processes applied to a discipline, Participant 108 believed the delineation was unclear and "present[ed] a distinction that one does not generally encounter in the literature." Participant 108 posited that discipline literacy processes are also applied.

Participants' beliefs about instructional practices reflected a continuum ranging from disbelief that there is a difference between the instructional practices and functions of content literacy and disciplinary literacy to each having its own set of skills. Two participants (102 and 103) noted differences in how practices are developed and applied to a disciplinary study. These participants' responses indicated an awareness that content literacy and disciplinary literacy functioned in different ways during the learning process. Participant 102 commented on how some strategies intersect disciplines, seeming "to cut across some fields," for example, "I-charts and other visual representations." The same participant noted that disciplinary literacy is "centered on the particularities of portraying meaning." The example the participant gave to illustrate how knowledge is communicated was the "precision [needed] in chemistry so as not to blow up the lab." Participant 102 considered aspects of content literacy and disciplinary literacy as "working in concert where appropriate." This participant noted that not all content areas are focused on text reading. The same participant referenced physical education, commenting on how it does not rely on reading texts, yet has its own practices typically focused on performance. Participant 103 expressed approval for the idea that both content literacy and disciplinary literacy use cognitive strategies as a matter of instructional practice. Like Participant 102, Participant 103 felt it was "reasonable" to consider disciplinary literacy practices as a reflection of the beliefs of the discipline, whereas content literacy practices are used in a variety of ways in the study of a discipline.

Participant 101 seemed to feel strongly that there was little difference between content literacy practices and disciplinary literacy practices. Participant 101 stated, "disciplinary literacy practices are both created within a discipline and also learned from the outside." Participant 101 referenced the use of comprehension monitoring practices that are utilized throughout the reading process. Participant 104, as discussed earlier, believed that it was not as important to note that disciplinary practices are created within a discipline because content literacy and disciplinary literacy practices use cognitive strategies that can be applied to the study of a discipline. Conversely, Participant 106 believed there was a clear distinction between content literacy and disciplinary literacy. The participant described content literacy as something to "help students understand texts of a discipline, often for the purpose of test-taking." This participant associated the instructional practices of content literacy with comprehension of text and disciplinary literacy as the "use of content-specific strategies and practices" presumably used for a deeper understanding of the discipline.

Participants often had conflicting beliefs as indicated by their responses to proposed definition statements. These conflicting beliefs were evident in the participants' rationale statements and follow up commentary. The responses indicated conflicting beliefs around terminology when defining disciplinary literacy and its relation to content literacy. Six participants specifically indicated issues with word choice in discussing disciplinary literacy and its comparison to content literacy as well as issues with how disciplinary literacy was described. Participant 107 discussed how "content" is not different from discipline, stating "'content' usually carries the connotation of the 'content' of a particular subject/discipline" and was not "clear how that would be different from or not contain/reflect 'the discipline's texts, discourses, and epistemology.'" Similarly, Participant 101 pointed out the juxtaposition of content to

discipline, noting there are ongoing discussions "regarding the relations among content, discipline, and subject. Participant 107 found issue with the use of "understanding" in juxtaposition to "application" in definition statements. When the term "understanding" is placed in a dichotomous position to application, Participant 107 explained,

> it places an artificial and perhaps indefensible constraint on the definition of 'understanding text' (content literacy) in that it assumes that 'understanding' is somehow divorced from application.

Two participants expressed their concerns with terms, such as "real world" and "authentic," when describing literacy instruction. Both expressed their belief that these terms are overused and jargonistic. Participant 107 considered these words "problematic from an academic and epistemological perspective" and that the term "real world" is particularly 'meaningless." Participant 108 noted that the term "real world" "can be interpreted too widely and subjectively." Further, Participant 108 stated that using the term "'real world application' opens up the argument about whether disciplinary experts studying specific topics in their fields are doing 'real world applications.'" Participant 102 made the observation that texts can be used inauthentically and referred to the use of "canned worksheets for grammar, which is antithetical to what we know about writing [instruction]." Participant 102 went on to state the same inauthenticity is seen in math classes that consider math instruction "as [a] stand alone subject poorly connected to real life practices." According to these participants, these terms seem to lack precision when discussing disciplinary literacy.

Participant 102 expressed concern regarding how the term 'literacy' is used when describing disciplinary literacy as it is not inclusive of all disciplines. Definition statements consistently referenced skills and strategies to understand content knowledge. Participant 102 did

111

not feel the term literacy in this context addressed "the broad array of fields spanning engineering to the arts."

Other participants explicitly expressed conflicting beliefs regarding any perceived differences between disciplinary literacy and content literacy. Participant 105 did not consider disciplinary literacy as different from content literacy based on the development of and how skills are used, explaining that disciplinary skills are not really thought of as being "constructed within the discipline." Participant 106 expressed an opposing view on content literacy processes, explaining "strategies used for content literacy in the classroom are often not cognitive; they are, instead, rote - used much like worksheets." Participant 106 went on to describe disciplinary literacy as more than cognitive strategies, rather "strategic thinking,"

Participants noted factors that affected their beliefs when considering disciplinary literacy and disciplinary literacy in comparison to content literacy. Participant 101 discussed how disciplinary literacy is related to one's beliefs about literacy learning. Specifically, disciplinary literacy is "a construction of notions of literacy related to learning within a discipline." Participant 101 described content literacy as a "set of skills and practices imported from outside into discipline." Participant 101 illustrates this idea with an example of how arguments in different disciplines have specific "processes and practices," contrasting this with the belief that content literacy strategies are used whenever reading any text. In the study of a discipline, students seek to understand texts using cognitive strategies, such as monitoring comprehension when reading.

Noting the difference between competent and non-competent readers is a consideration that affects beliefs about content literacy and disciplinary literacy. From the first iteration, Participant 101 expressed concern regarding a false dichotomy being perpetuated throughout the

iteration discussions. Participant 101's final comment indicated a shift in thinking about how content literacy and disciplinary literacy function in the act of reading.

> When you think of cognitive strategies, they are often applied without being articulated by teachers within disciplines. "Competent" readers can simultaneously use both generic and more discipline-specific cognitive strategies, monitor, self-regulate, etc. The false dichotomy argument that I bring up repeatedly about content literacy versus disciplinary literacy is invalidated by the idea that competent readers and writers can shift in and out of disciplines pretty well.

Other participants posited similar ideas about how content literacy and disciplinary literacy weave practices together. Participant 106 stated, "Disciplinary literacy doesn't 'extend' content literacy; rather, it 'utilizes' it so texts, discourses, practices, understandings may be used in the practice of the disciplines." Another participant described disciplinary literacy as a way to connect strategies in the process of studying a discipline, stating "disciplinary literacy seeks to link strategies to the ways in which authentic texts are approached within particular disciplines" (Participant 104). Content knowledge building is noted as a function of both content literacy and disciplinary literacy. Participant 108 felt it was important not to emphasize one over the other. The participant went on to explain the importance of a "distinction that emphasizes knowledge-building as a function of literacy learning within a discipline" and "also recognizes the distinct and disciplinary-specific uses of literacy within the study of a discipline." Conversely, Participant 105 did not agree with disciplinary literacy as the specific use of literacy strategies. Participant 105 does not see a distinction between content literacy and disciplinary literacy.

Participant 108 expressed the belief that disciplinary literacy is connected to discipline expertise and discussed that "disciplinary literacy connects to the practices of people who study a discipline" and therefore should be included in any definition for disciplinary literacy. Similarly, Participant 102 emphasized the importance of the "particularities of portraying meaning in a specific field, e.g. precision in chemistry so as not to blow up a lab!" This belief about disciplinary literacy positions it as moving beyond building content knowledge, to include how one communicates his or her understanding of a discipline.

Other participants shared factors that affect how they view content literacy and disciplinary literacy. Participant 106 related content literacy to the test-taking genre, stating that "content literacy is used to help students understand the texts of a discipline, often for the purpose of test-taking." In this, the participant believes that disciplinary literacy is more than a collection of strategies applied to texts. Participant 102 shared the belief that disciplinary literacy should consider "the multimodal elements that encompass curriculum in various fields." The same participant also emphasized that any consideration of content literacy and disciplinary literacy should be research-based.

Seeking Clarity

For this theme, the data indicated the participants' need for clarity on how disciplinary literacy is defined. Participants' rationale statements and follow-up comments indicated that disciplinary literacy still needs further research and development.

Based on participants' responses, any definition of disciplinary literacy needs to consider teachers. For example, participant 108 emphasized the importance of having a concise definition that is "teacher-friendly." The same participant also noted that any definition should be one that provides a clear idea of how to implement disciplinary literacy practices in the classroom setting

and ought to be understandable to those "outside the research community" and "communicate well to classroom teachers or the public." Similarly, Participant 103 called for a definition that is practitioner-friendly and less "jargony."

Participants' responses indicated that, when defining disciplinary literacy, how terms and phrases are used should be taken into consideration. When discussing a proposed definition for disciplinary literacy, Participant 106 noted that disciplinary literacy is more than the use of literacy tools (reading, writing, speaking, listening, and reasoning), stating "I would add 'understanding of' in addition to 'use of.' In regard to the use of literacy tools when defining disciplinary literacy, Participant 107 said the term literacy tools needs to be "clearly described and defined in cognitive terms." Participant 106 discussed the use of other terminology, noting that the use of "set of skills" when discussing disciplinary literacy may be "too narrow to fully differentiate" between content literacy and disciplinary literacy. Participant 106 argued that with disciplinary literacy the "'set of skills'" is based on disciplinary understanding constructed from new knowledge rooted in metacognitive practices." When reviewing proposed definition statements, participants commented on the need for clear, concise definitions. Participant 108 discussed how "vague wording" should be avoided. Participant 103 proposed that a disciplinary literacy definition should not be "too long and complicated." For participants, specificity is an important consideration when developing a clear definition of disciplinary literacy.

Participants noted the use of "generic" versus "general," expressing differing opinions about which term was more appropriate when describing content literacy. Participant 103 felt that the use of "general" was more appropriate when delineating the differences between content literacy and disciplinary literacy. Participant 107's remarks indicated that the use of "generic" was acceptable, provided that there was a "clear distinction between 'generic' and 'discipline-

specific' literacy strategies." Participant 107 questioned "where/when is [a] student using 'generic' vs. 'discipline specific' literacy strategies and exactly how are the 'discipline specific' literacy strategies used?" Further, Participant 107 wondered how "'discipline specific' literacy strategies used in chemistry were different from those used when reading a novel in English class?" Similarly, Participant 102 posited that "we need more specifics regarding those features of being grounded in a discipline." Participant 107 argued,

> the field is still waiting for those who argue for the concept of disciplinary literacy
> to demonstrate which specific 'metacognitive strategies' vis-a-vis language-ing
> processes are used differently in, say, science vs. history vs. math.

Similarly, Participant 108 indicated that any definition would need to make distinctions between the disciplines.

Participant 107 also noted another aspect of defining disciplinary literacy that needs clarification. When considering how students construct knowledge, the participant felt that "it is likely rare that students (and even many researchers, for that matter) actually construct new knowledge in a particular discipline." The participant proposed that it may be more appropriate that students are "participating in the construction of knowledge." In general, this participant believed that when defining disciplinary literacy, terminology needs to be clearly defined, stating that

> 'specific literacy strategies and practices of a field of study' are clearly
> described and defined in cognitive terms and that cognitive literacy processes
> used in the various disciplines are clearly distinguished.

Another aspect participants noted regarding clarity included concerns with how disciplinary literacy is used. Generic strategies are "not enough to truly experience what it means

to be 'literate' in a discipline" (Participant 102). Participant 105 seemed to agree, noticing that "general content area cues aren't enough." Further, Participant 105 stated that "disciplinary literacy relies on strategic thinking more than cognitive strategies." Similarly, Participant 103 thought the strategic use of cognitive strategies was an "important consideration" when defining disciplinary literacy. To have clarity when defining disciplinary literacy, Participant 107 proposed that what constitutes the processes of content literacy and disciplinary literacy needs to be addressed. The participant stated that "it is not very clear which literacy processes are specific to a particular discipline." Additionally, Participant 102 believed that due consideration should be given to the performing arts, citing research that only considering reading, writing, speaking, listening, and reasoning as disciplinary literacy processes "may miss the mark when we are talking about the arts where 'performing' is paramount, (e.g. music)."

Participants indicated that how discipline expertise could be implemented in the educational setting needed further clarification. Participant 105 agreed that disciplinary literacy was the real-world application of a discipline, specifically applying the skills that experts in a discipline use. As discussed earlier, the concept of "real world applications" is a point of contention among participants; however, it is a consideration when defining disciplinary literacy as it relates to discipline expertise. Participant 105 also commented on how disciplinary literacy is like "wearing the hat of a specialist." Another participant (104) remarked that disciplinary literacy relates "to how people who work in a discipline approach text in that discipline." Participant 107 posited that disciplinary literacy may be more appropriate for post-secondary students and how "there is little empirical evidence" that "an understanding of how and why experts in a field study, create, communicate, and share disciplinary knowledge" has any effect on "(K-12) students'" ability to "navigate a wide range of disciplinary texts." While the

connection to expertise is noted as an important consideration of disciplinary literacy, further

clarity is needed as to what this would look like in the classroom.

Summary of the Chapter

The analysis of the questionnaire data indicated the literacy community does not yet have

a shared understanding of disciplinary literacy and how it integrates with content literacy

practices, practices that have been researched for a significant period of time (Alvermann &

Moore, 1991; Bean, 2000). Participants' responses regarding how to define disciplinary literacy

appear to align with the notion that each discipline's tradition and practices should be honored

and reflected in the instructional practices used in the classroom. With this belief, the emphasis is

on experiential knowledge. This is more than the notion of 'thinking like a…(historian,

mathematician, etc.).' The teacher, the content expert, shares knowledge of the disciplinary

practices and discourses. Students studying a discipline learn how experts in the discipline

process content information and then produce content knowledge. In doing so, students of a

discipline appropriately engage with disciplinary materials and are able to communicate using

the discipline's unique discourse.

When comparing content literacy and disciplinary literacy, participants noted the two

were different. Content literacy is considered for general use and disciplinary literacy is utilized

to develop a deeper understanding of the content. Content literacy was viewed as the use of

generic strategies for reading comprehension that do not reflect the specific literacy practices of a

discipline. While participants discussed their differences, it was noted that both generic strategies

and discipline-specific practices are a part of learning the content. Participants discussed that

both content literacy and disciplinary literacy require cognitive processes to develop content

knowledge; therefore, the attributes of both content literacy and disciplinary literacy are necessary when studying any given discipline.

The list of seminal works for disciplinary literacy was not fully developed during the study as originally planned; however, the participants provided information that further reinforced their beliefs regarding content literacy and disciplinary literacy. Shanahan and Shanahan's 2008 publication was recognized as having a significant impact on the development of Common Core standards. Draper and Broomhead's *(Re)imagining Content-Area Literacy Instruction* (2010) seems to have had an impact on participants' beliefs about disciplinary literacy. Draper and Broomhead challenged the notion that instruction cannot be both content-driven and literacy-driven. In addition, the book's contributors explored what constitutes literacy in a discipline. Five of the nine participants ranked both works in their top ten. Also notable from this section of the study is that Herber's 1978 publication, *Teaching Reading in Content Areas*, was still considered by participants to be relevant to the discussion of disciplinary literacy. The lack of or incomplete responses from participants suggest that some literacy experts may not have a shared understanding of content literacy and disciplinary literacy, reinforcing the Draper and Broomhead discussion of what can be a contentious dynamic between content instruction and literacy instruction by content teachers and literacy professionals.

When considering possible definitions for both disciplinary literacy and content literacy, participants again indicated that there is not a shared understanding for either concept. An analysis of participants' ratings of rationale statements and responses to the summarized rationale statements provided a better understanding for the ratings of the definition statements. Three themes emerged from these responses - Understanding Disciplinary Literacy, Beliefs about Literacy Instruction, and Seeking Clarity. In the theme, understanding disciplinary literacy,

participants' responses revealed their beliefs about disciplinary literacy, which leads to their understanding of disciplinary literacy. Participants recognized the use of strategies for discipline specific purposes while also recognizing the unique discourses inherent in each discipline. For the theme, beliefs about literacy instruction, participants' responses indicated concerns about how the literacy community positions content literacy and disciplinary literacy. Participants felt that the practices of both content literacy and disciplinary literacy are necessary to student learning. Overall, it was evident in participants' responses that there are conflicting beliefs regarding disciplinary literacy.

The third theme, seeking clarity, revealed the participants' concerns about how disciplinary literacy is defined. Any definition should give due consideration to the teacher's ability to implement disciplinary literacy practices. The definition should carefully consider how the definition is constructed, specifically the words and phrases. Specificity seemed to be especially important. This included how students in a discipline showed their understanding of the content and discipline's discourses. Finally, participants felt it was important that it was clear what literacy processes were aligned with content literacy and the literacy processes that align with disciplinary literacy. One participant thought that disciplinary literacy may be more appropriate for the post-secondary setting. Consistently, participants called for more research and discussion to further delineate content literacy and disciplinary literacy and how the two interact with each other in the classroom setting.

CHAPTER V: DISCUSSION AND CONCLUSION

The purpose of this Delphi study was to engage literacy experts in a discussion to understand what disciplinary literacy is and how it compares to content literacy. Further, the researcher asked literacy experts to identify seminal works in the field of disciplinary literacy and provide a rationale for the works they identified. As the study progressed, the content analysis took a different direction, focusing on the participants' responses and rationales to explain their ratings of definition statements and summary statements. This chapter discusses the findings of the study and what implications these findings have for teacher preparation and literacy instruction. The chapter concludes with a discussion of areas for future research.

Discussion

This chapter is a discussion of the research findings and future research possibilities to answer the following research questions:

1. How do experts in the field of content area reading instruction define disciplinary literacy and describe it in relation to content area literacy?

2. What significant works in disciplinary literacy are noted by experts in the field of content area reading instruction and why are they noted as significant?

3. What commonalities emerge in the rationale provided by participants when identifying significant works for disciplinary literacy?

The analysis of the discipline literacy definition statements using Moje's Disciplinary Literacy Theory categories (2007) revealed that participants in this study primarily believed that disciplinary literacy is connected to the epistemology of each discipline. Participants' responses emphasized the importance of honoring a discipline's traditions and utilizing experiential knowledge.

The emphasis on a discipline's traditions indicated teachers must consider the traditions of the discipline, explicitly incorporating those traditions when designing student learning experiences. Elish-Piper, L'Allier, Manderino, & Di Domenico (2016) described these traditions as the components of disciplinary literacy – habits of thinking, types of texts used, habits of practice, and beliefs about knowledge and how knowledge is produced. Teaching the habits of mind, along with teaching how to read texts and write discipline appropriate responses is essential in disciplinary literacy instruction (Dobbs, Ippolito, and Charner-Laird, 2017). When designing instruction that considers the discipline's traditions, teachers must consider how to provide instruction in content knowledge while explicitly incorporating those traditions in students' learning experiences.

Participants indicated that experiential knowledge is an important aspect of disciplinary literacy. Responses emphasized the notion of thinking like an expert. In Shanahan and Shanahan's (2008) study, they worked with content experts to determine what these experts did when reading and then how they produced their content knowledge. After noting the conversations and observing the participants in the field, Shanahan and Shanahan concluded that the teachers preferred strategies that "mirrored the kinds of thinking and analytic practices common to their discipline," but showed no interest in using general strategies (p. 56). Based on her literature review, Moje (2007) noted the importance of learning how to read texts critically like those who are experts in a discipline. Lent (2016) discussed providing students with opportunities "to do" what experts do in any given discipline while "developing the academic habits of those in the field" (p. 2).

Disciplinary literacy statements were analyzed using Fang's Approaches to Developing Content Literacies categories (2012a). Fang described four approaches to content literacy

instruction. The *cognitive approach* uses generic strategies for reading comprehension that are applicable for use in all content areas. The *sociocultural approach* recognizes the funds of knowledge students bring to the academic setting and seeks to connect a student's home to the academic setting. The *linguistic approach* considers vocabulary and text structure, extends students' understanding of syntax, and builds students' language toolbox to promote a deeper nderstanding of texts. The *critical approach* asks students to consider the positionality of the text in terms of the author's purpose with the intention of having students critically evaluate the nature of the texts they are reading. None of the participants' responses aligned with the sociocultural or critical approaches to content literacy instruction. Fang did not identify instructional practices that align specifically with the epistemological processes of a discipline. Six of the nine participants' disciplinary literacy definitions aligned with the belief that there are specific ways of processing and communicating content information that relates to the discipline's traditions. Moje noted that there is "very little evidence in the actual writing of scholars" to support how epistemological processes function in the classroom (p. 18). Moje went on to explain that "these scholars argue for studying and teaching the cognitive processes by which members of the discipline produce knowledge" (p. 18). Similarly, Shanahan and Shanahan (2008) found that experts in a discipline had very specific ways of thinking, reading, and writing about content information. Fang's (2012a) linguistic approach to content literacy instruction does address instructional practices to teach the discourses of a discipline; however, only two participants submitted definitions that considered the oral and written conventions of a discipline. Therefore, if one believes that disciplinary literacy focuses on the epistemology of a discipline, then it is unclear what instructional approach(es) a content teacher would implement.

The descriptors indicated that the participants believed there were more differences than similarities. When asked to describe disciplinary literacy as it relates to content literacy, participants indicated that disciplinary literacy and content literacy were similar in some ways. The similarities suggested that disciplinary literacy and content literacy shared the use of cognitive strategies; however, participants described these strategies as generic with the intent to improve reading comprehension. Regarding the differences between disciplinary literacy and content literacy, the descriptors used by participants suggested that the focus of disciplinary literacy practices is to cultivate a deeper understanding of how discipline experts communicate their knowledge, going beyond comprehension. Participants noted there was a difference between the two, each having a place in the development of a student's content knowledge. These findings reflected Shanahan and Shanahan's (2008) discussion of the different levels of literacy instruction that occur – basic literacy, intermediate literacy, and disciplinary literacy. Shanahan and Shanahan described the intermediate literacy level as including skills that could be applied to many tasks related to comprehension strategies and vocabulary development. This level corresponds to the descriptors participants used to describe their perception of content literacy.

Median ratings suggested that participants felt a definition for disciplinary literacy should include cognitive practices often associated with content literacy and strategies that are specific to a discipline's literacy practices. The researcher conducted a content analysis of participants' rationale statements and responses to summarized rational statements that resulted in the development of three themes: Understanding Disciplinary Literacy, Beliefs about Literacy Instruction, and Seeking Clarity. The theme Understanding Disciplinary Literacy described the participants' beliefs about disciplinary literacy. Participants' responses focused on the

importance of teacher expertise and disciplinary traditions. For the theme Beliefs about Literacy Instruction, it was important to participants that disciplinary literacy and content literacy not be positioned in opposition to each other or presented as one is better than the other. While it was recognized that each discipline has a unique discourse, practices, and ways of thinking, the practices associated with content literacy should not be abandoned for discipline-specific literacy practices. Researchers have proposed that both content literacy strategies and discipline-specific strategies be incorporated in classroom instruction (Brozo, Moorman, Meyer, & Stewart, 2013; Dunkerly-Bean & Bean, 2016; Moje, 2015; Shanahan & Shanahan, 2008).

The largest part of the datum focused on the need for more clarity on disciplinary literacy and its role in the classroom. Participants' responses indicated that there is not a shared understanding of disciplinary literacy, nor is there a clear idea of what disciplinary literacy looks like in practice. While there was some agreement about disciplinary literacy definitions, each definition reflected different aspects of Disciplinary Literacy Theory (Moje, 2007). There was not a singular disciplinary literacy definition that emerged.

As discussed in Chapter 4, the participants did not express an interest in identifying or discussing seminal works in the area of disciplinary literacy. One participant expressed that a discussion of this nature was not necessary. Of the titles and authors submitted for consideration, the work that was ranked five times by participants and had participant commentary was Shanahan and Shanahan's (2008) publication, "Teaching Disciplinary Literacy to Adolescents: Rethinking Content Area Literacy." The work was described by one participant as influential in the development of the Common Core State Standards thus having an impact on literacy instruction on a national level. It is interesting that Herber's *Teaching Reading in Content Areas* (1978), a seminal work in the field of content area reading instruction, is still considered to be

relevant to the disciplinary literacy discussion. This work was ranked in the top ten by four participants, with two participants ranking it in their top three. This suggests that the concept of functional teaching is still considered relevant by literacy experts.

Implications

Among literacy experts, there is still discussion on content literacy and how it relates to and how it differs from disciplinary literacy. The spectrum of responses from participants in this study indicates there are those who do not see a difference to those who consider disciplinary literacy to be the next step in literacy instruction in the content areas. This suggests that literacy experts are still making determinations about what disciplinary literacy is, what it looks like, and how it interacts with the content literacy practices that have been used by content teachers for many years. Dobbs, Ippolito, and Charner-Laird (2017) posited that disciplinary literacy is still developing, and "there are many strategies still to develop for teachers to implement, tweak, and ultimately integrate into their daily practice" (p. 23).

Teacher Expertise

Based on participants' responses, both disciplinary literacy and content literacy rely on teacher expertise. Herber's 1978 publication, *Teaching Reading in Content Areas*, discussed functional teaching and cited the importance of the content teacher in determining what reading skills are necessary to understand the content. Functional teaching is "teaching the process students need if they are to understand what you require them to read, as they actually read it" (p. 26). A similar emphasis on teacher expertise is evident in disciplinary literacy instruction in which teachers ask students to consider the study of a discipline on a deeper level; a level of study that intentionally has students consider the "how" and "why" of a discipline's discourses (Lent, 2016). Shanahan and Shanahan (2008) explained that disciplinary literacy is the level of

understanding a discipline beyond what the authors referred to as "intermediate literacy skills," skills that are applicable for use with many literacy tasks, such as strategies used for comprehension. Shanahan and Shanahan described disciplinary literacy as the "literacy skills specialized to history, science, mathematics, literature, or other subject matter" (p. 44). The teacher serves as the facilitator for understanding not only the content but also the traditions and discourses of the discipline. In order to serve as a facilitator, teacher expertise is necessary.

Teacher Preparation

Providing this type of instruction in the secondary setting requires that teachers are adequately prepared in teacher preparation programs. The classroom teacher may understand content but may not understand how to explicitly teach the discipline communities' beliefs. Teacher expertise is necessary for successfully teaching in the disciplines; therefore, more emphasis should be placed on preparing teachers to have a deeper understanding of the literacies and discourses of their discipline. It has been noted that teachers experience frustration when asking students to read content materials and that they attribute this frustration to teacher training programs (Lent, 2009). Pre-service teachers need to learn more than a series of strategies that can be used as part of their instructional practice. Content teachers should determine what constitutes being "literate" in a discipline so that teachers can decide what instructional strategies and practices are implemented (Draper & Broomhead, 2010). Pre-service teachers need to take a metacognitive approach to connect with the traditions and discourses of their discipline. Ultimately, teachers should have an awareness that disciplinary literacy is a form of apprenticeship where the teacher serves as a guide (Lent, 2016; McConachie & Petrosky, 2010).

Braunger, Donahue, Evans, and Galguera (2005) asserted that too much emphasis is placed on content knowledge and classroom management in teacher preparation programs. Little

time is given to learning theory and thus creates an "expert blind spot" where the teacher assumes students can complete learning tasks when in fact they are not (p. 6). Herber (1978) asserted a similar issue with teachers preparing students for learning independence, assuming students come prepared with skills and know how to use those skills independently in each content area. Herber explained this assumption is not teaching.

> Their role is testing rather than teaching - testing to see how well students are performing with the skills they are assumed to possess, testing to see what knowledge they have acquired while exercising the skills in which, it is assumed, they have independent power. Teaching consists mainly of daily assignments on which students recite the following day in a teacher-led discussion. Teachers and texts become information-dispensers, a role for which machines are better suited (p. 215).

Braunger, Donahue, Evans, and Galguera (2005) noted that content teachers need to have an understanding of how reading is developmental, and instruction should serve to develop the necessary skills that are needed as texts become more complex.

> The instructional implications are clear: teachers must be knowledgeable about all of their students' content area literacy strengths and needs, about the demands of particular texts, and about the support necessary for particular students to learn from them (p. 13).

To that end, Braunger, Donahue, Evans, and Galguera expounded on a teacher preparation model that apprentices pre-service teachers to reading in their content area. In doing so, pre-service teachers maintain a portfolio of reading experiences in their own content area and with a partner from another content area. The pre-service teachers read, reflect upon, and discuss their reading

experiences to make connections to the different dimensions of reading: social, personal, cognitive, and knowledge-building. Pre-service teachers who have participated in this exercise noted the importance of creating a safe space for reading content. Additionally, the pre-service teachers realized that when discussing material from a content area other than their own, they became more confident, seeing the text through the eyes of the content expert. For the pre-service teachers, the process made reading content texts seem more attainable and less intimidating. Pre-service coursework that engages the individual in the practices of the discipline is more valuable than reading about a discipline (Draper & Broomhead, 2010).

Pre-service teachers made connections to their experiences with the apprentice program and their instructional strategies, such as making personal connections to texts, showing and sharing what proficient readers do, providing background knowledge and vocabulary, and think-alouds. Braunger, Donahue, Evans, and Galguera (2005) concluded this method of preparing teachers created a sense of empathy for students studying a discipline. Pre-service teachers were more aware of avoiding assumptions of what their students should know and be able to do. Further, as teachers, they understood that teaching students how to read discipline-specific texts is a necessary part of teaching their discipline.

University Collaboration with Practicing Teachers

Another aspect of teacher preparation programs that needs further exploration is the collaboration between university-based programs and practicing or inservice teachers. Shanahan (2012) advocated for content teachers to work in conjunction with literacy experts to determine the most effective practices for students to read disciplinary materials. Rainey, Maher, Coupland, Franchi, and Moje (2017) presented a model of a teacher preparation program that is based on a framework for disciplinary literacy instruction that incorporates all four beliefs represented in

Moje's (2007) Disciplinary Literacy Theory. This framework, used in the teacher preparation program, is based on Moje's (2015) 4-E heuristic that focuses on the beliefs and traditions of a discipline, strategies for comprehension, the discipline's language, and the cultural practices of the discipline. The teacher uses the framework as a guide to design student experiences that reflect the literacies and discourses of the discipline. Teachers in the field work in collaboration with university faculty to continue to refine the application of the framework. Based on the outcomes of the collaboration, the overall teacher preparation program is continually improved. Pre-service teachers benefit from the program as they have disciplinary teaching models of instruction that is current and relevant to the development of their own disciplinary teaching experiences.

Understanding Literacy Processes

In addition to utilizing an apprenticeship model for pre-service teachers, it is necessary for the pre-service teacher to understand the reading and writing process (Elish-Piper, L'Allier, Manderino, & Di Domenico, 2016). The pre-service teacher can then be guided to make connections with those processes as well as what constitutes reading and writing in his or her discipline. Draper and Broomhead (2010) discussed how each discipline considers what constitutes reading and writing for the discipline and how some disciplines, such as math, have literacy elements that do not align with traditional texts. This understanding will enable the pre-service teacher to make connections to discipline-specific learning strategies and design the appropriate student experiences.

In-service Teacher Learning

In-service teachers need ongoing support to identify discipline-specific practices and opportunities to incorporate those practices into their daily instruction. For in-service teachers,

Dobbs, Ippolito, and Charner-Laird (2017) described a professional learning experience that provides for collaboration and conversation led by campus leaders, the ability to tailor those practices to the students in their classrooms, and opportunities to reflect. They discussed how professional learning should be ongoing, systematic, and specific to the team. The authors put forth a framework using an action research format for instituting school-wide disciplinary literacy professional learning. This framework allows in-service teachers to participate in ongoing collaboration regarding literacy instruction, develop disciplinary literacy practices, and design ongoing assessment of those practices. Elish-Piper, L'Allier, Manderino, & Di Domenico (2016), referencing the Shanahan's literacy triangle (2008), adapted the disciplinary literacy level of the triangle to reflect the different types of teacher knowledge needed to provide disciplinary literacy instruction. They proposed the use of a disciplinary literacy coach, a term the authors use interchangeably with "literacy coach," to help teachers identify the specific disciplinary literacy practices to incorporate in their instruction, as teachers may not have an awareness about the practices they use in their own discipline.

These approaches develop pre-service teachers' expertise in literacy instruction and disciplinary literacy practices. Further, in-service teachers require continuing support and time to develop disciplinary literacy practices. It is important that campus leadership has a sufficient understanding of literacy instruction and disciplinary literacy so they can support teachers in their professional growth.

Implications for Research

Participants in this Delphi study called for a concise, teacher friendly disciplinary literacy definition. Moje's (2007) Disciplinary Literacy Theory is comprised of different beliefs of what constitutes disciplinary literacy. While the definitions presented to the participants represented

each of the beliefs, the participants' rationale statements indicated that a definition of disciplinary literacy needs further clarification. It is important that literacy experts, content teachers, and those practicing in the disciplinary field have a shared understanding of disciplinary literacy and the practices that result in student experiences for disciplinary learning. Fisher and Ivey (2005) discussed how content teachers and even colleagues in other fields of study were resistant to the content literacy course offered as part of collegiate teacher training programs. As it is literacy experts in the university-based programs who provide pre-service teachers with instruction in literacy knowledge and instruction, it is likely content teachers are not making connections with literacy practices and discipline-specific traditions disciplinary literacy instructional practices to their students' learning experiences. This may result in content teachers not having an awareness of the traditions and discourses of their discipline and consequently focus on the content. This lack of awareness leads to the assumption that students know how to read, write, speak, and think in the discipline. Based on the median rating from this study and the participants' rationale statements, more studies need to be conducted to clearly define disciplinary literacy.

Participants in this study noted that the discussion around disciplinary literacy does not give due consideration to all disciplines. Draper and Broomhead (2010) discussed the importance of other disciplines recognizing the literacies that are used in the pursuit of their discipline. This pursuit of identifying those literacies can be achieved through the collaboration of literacy professionals and teachers in the discipline (Elish-Piper, L'Allier, Manderino, & Di Domenico, 2016). Heller and Greenleaf (2007) emphasized the benefits of not only defining but clearly outlining the specific literacy practices and work products that demonstrate the practices of the discipline. The *Next Generation Science Standards,* based on the framework for K-12 science

learning, outlines what practices show a student's understanding and how these practices explicitly connect to the discourses of science (NGSS Lead States). This framework gives teachers a clear pathway to designing student experiences that reflect the traditions and discourses of science with the intention to lead students to a deeper understanding of the content. The work of the NGSS can serve as a template to guide the collaboration between literacy experts and discipline experts.

As this study did not create a list of seminal works in the area of disciplinary literacy as intended, more research needs to be conducted in developing a list. Further, the works on the list need to be analyzed to determine what commonalities exist within them in order to establish a shared understanding of disciplinary literacy. The analysis may also lead to a clearer understanding of how disciplinary literacy is positioned with previous literacy instruction in content classrooms. This development and analysis will lead to a shared understanding of disciplinary literacy and its place in literacy instruction. A clearer understanding of what disciplinary literacy is and is not would lead to better implementation in the classroom setting.

Bean (2000) reported that research on general literacy strategies and study skills had proven to be ineffective when done in isolation, as the research did not consider how the classroom dynamics, teachers' experiences, and student perspectives may have impacted the research results. When other research considered the participants' perspective, the researchers looked for patterns to inform practices. More quantitative studies should be conducted to determine how effective discipline-specific strategy instruction is and if there is a difference between these strategies and the content literacy strategies that focus on general reading comprehension, vocabulary development, and written responses. As one participant noted, there are few empirical studies on the effect of discipline-specific instructional strategies to student

learning. These researchers need to consider teacher experience and the teachers' understanding of their discipline. Any studies conducted should consider the larger classroom dynamics and student perceptions; otherwise, the studies may reflect strategies in isolation, such as the studies of content literacy strategies in the 1980s.

In addition to these studies, more qualitative studies should be conducted to determine what barriers still exist to content teachers' utilization of discipline-specific strategies in their practice. Content teachers still resist literacy practices in their classroom, viewing these practices as keeping them from teaching content (Lent, 2009). In order to overcome these barriers, researchers would need to have a clear understanding of what those obstacles are. The results can be utilized to streamline teacher preparation programs as well as to prepare literacy coaches and campus leaders in how to coach teachers effectively in the use of disciplinary literacy instruction.

Limitations and Delimitations

In addition to the limitations of time, resources, and finances, the list of potential participants was developed based on predetermined qualifications and reviewed by literacy professors at a South Texas university. The researcher did not presume the potential participants' list was a comprehensive list of literacy experts.

In a Delphi study, the information the researcher provides participants can influence their feedback. Hsu and Sandford (2007) asserted that researchers "need to be cognizant, exercise caution, and implement proper safeguards in dealing with this issue" (p. 5). Yousaf (2007) noted information can be manipulated by the researcher resulting in a "compromise position," a result that is not an actual consensus of the group's work (p. 4).

A limitation of content analysis is that it can decontextualize information. When the researcher analyzes the data, datum can be misinterpreted by the researcher as it is removed from

context and then categorized, possibly changing the participant's intent (Grbich, 2007). Another limitation of content analysis is that the findings rely on the accuracy of the codes and the coder (Holsti, 1969). Another researcher may interpret the data differently and draw different conclusions.

While this study did not seek to form a consensus, a compromised position may be the result of preconceptions of the researcher or the researcher not acknowledging the input from all the panel experts. The researcher chose to do three iterations. A Delphi study can have two or more iterations (Thangaratinam, & Redman, 2005). As the original Delphi had more than three iterations, the researcher did choose to modify the Delphi technique to do three iterations.

The researcher chose to use Moje's (2007) Disciplinary Literacy Theory and Fang's (2012a) Approaches to Developing Content Area Literacies as the theoretical perspective for this Delphi study. The theoretical perspective provided the framework for the study.

The Delphi method can include low participation from the expert panelists due to the time involved to adequately analyze and summarize data between iterations. There was no way of knowing who would agree to participate and if they would continue with the study through the various iterations. In fact, this study began with ten participants who agreed to participate and concluded with eight participants. Due to the small sample size, the results of the study cannot be generalized to the entire literacy community. The Delphi method is not intended to provide solutions to the questions being studied, as the expert panelists are a select group and not necessarily representative of an entire community. The findings of this study were contingent on the interpretation of the researcher. As this was a qualitative study, another researcher may have interpreted the data differently and draw different conclusions.

Conclusion

Disciplinary literacy is an area of literacy instruction that is developing. It is a form of literacy instruction that literacy experts recognize as having its own distinct components, separate from the content literacy instruction that incorporates general cognitive strategies. Despite the recognition of the distinctiveness of disciplinary literacy, the literacy experts in this Delphi study could not agree on a definition for disciplinary literacy. While each of the definitions incorporated one or more of Moje's (2007) beliefs about disciplinary literacy, most participants aligned with the epistemology processes of a discipline. This belief does not have clear instructional strategies associated with it. This is an area of development that will rely on discipline-based organizations, teacher preparation programs, and teachers in the field to fully develop discipline-specific instructional strategies and apprenticeship style models of instruction in schools. Although a single definition did not emerge, the participants provided information through the Delphi study "discussion" to illustrate concerns about positionality of disciplinary literacy in relation to content literacy, areas that need further research, and confirmed previous research on the role of the content teacher in designing student literacy learning experiences.

REFERENCES

Adams, A., Carnine, D., & Gersten, R. (1982). Instructional strategies for studying content area texts in the intermediate grades. *Reading Research Quarterly, 18*(1), 27-55. doi: 10.2307/747537

Alvermann, D. E., & Moore, D. W. (1991). Secondary school reading. In R. Barr, M.L. Kamil, P.B. Mosenthal & P.D. Pearson (Eds.), *Handbook of reading research, Vol. 2,* (pp. 951-983). New York, NY: Longman.

Aumen, J. (2017). *Supporting teacher learning about disciplinary literacy: An exploration of professional development, social studies teachers' thinking, and inherent challenges* (Doctoral dissertation, University of Michigan).

Bader, L. A., & Pearce, D. L. (1983). Content area reading preparation: Effectiveness of four methods of instruction. *Reading Horizons*, *23*(2), 7.

Bean, T. W. (2000). Reading in the content areas: Social constructivist dimensions. In M.L. Kamil, P.B. Mosenthal, P.D. Pearson, & R. Barr (Eds.), *Handbook of reading research, Vol. 3*, (pp. 629-644). Mahwah, NJ.: Lawrence Erlbaum Associates.

Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: A tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research, 26*(13), 1802-1811. doi:10.1177/1049732316654870

Braunger, J., Donahue, D.M. Evans, K., & Galguera, T.. (2005). *Rethinking preparation for content area teaching: The reading apprenticeship approach*. San Francisco, CA: Jossey-Bass.

Brown, B. B. (1968). *Delphi process: A methodology used for the elicitation of opinions of experts*. Santa Monica, CA: RAND Corporation.

Brown, J. A. (2011). *A delphi study of best practices for the achievement of english language learners* (Doctoral dissertation, Walden University).

Brozo, W. G., Moorman, G., Meyer, C., & Stewart, T. (2013). Content area reading and disciplinary literacy: A case for the radical center. *Journal of Adolescent & Adult Literacy*, *56*(5), 353-357. doi: 10.1002/JAAL.153

Buehl, D. (2017). *Developing readers in the academic disciplines*. Portland, ME: Stenhouse Publishers.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, *20*(1), 37-46. doi: 10.1177/001316446002000104

Cramer, J. (2016). *Exploring how secondary teachers conceptualize disciplinary literacy* (Doctoral dissertation, Edgewood College).

Cunningham, D., & Shablak, S.L. (1975). Selective reading guide-o-rama: The content teacher's best friend. *Journal of Reading, 18*(5), 380-382.

Daines, D. (1971). *Developing reading study skills in the content areas.* Paper presented at the meeting of the International Reading Association, Atlantic City, N.J., Apr. 19-23, 1971.

Dobbs, C.L., Ippolito, J., & Charner-Laird, M. (2017). I*nvestigating disciplinary literacy: A framework for collaborative professional learning*. Cambridge, MA: Harvard Education Press.

Draper, R. J., & Broomhead, G. P. (Eds.). (2010). *(Re)imagining content-area literacy instruction*. New York, NY: Teachers College Press.

Dupuis, M. M. (1984). *Reading in the Content Areas: Research for Teachers*. Newark, DE: International Reading Association.

Dunkerly-Bean, J., & Bean, T. W. (2016). Missing the savoir for the connaisance: Disciplinary

and content area literacy as regimes of truth. *Journal of Literacy Research, 48*(4), 448-
475. doi: 10.1177/1086296X16674988

Elish-Piper, L., L'Allier, S.K., Manderino, M., & Domenico, P.D. (2016). *Collaborative
coaching for disciplinary literacy: Strategies to support teachers in grades 6-12*. New
York, NY: The Guilford Press.

Faggella-Luby, M. N., Graner, P. S., Deshler, D. D., & Drew, S. V. (2012). Building a house on
sand: Why disciplinary literacy is not sufficient to replace general strategies for
adolescent learners who struggle. *Topics in Language Disorders*, *32*(1), 69-84.

Frambaugh, C., Buelow, K. S., & Steele, J. S. (2015). What are disciplinary literacies in dance
and drama in the elementary grades?. *Journal of Language and Literacy Education,
11*(1), 65-87.

Fang, Z. (2012a). Approaches to developing content area literacies: A synthesis and a critique.
Journal of Adolescent & Adult Literacy, 56(2), 103-108. Retrieved from
http://www.jstor.org.manowar.tamucc.edu/stable/233677. doi: 10.1002/JAAL.00110

Fang, Z. (2012b). Language correlates of disciplinary literacy. *Topics in Language Disorders,
32*(1), 19-34. doi: 10.1097/TLD.0b013e31824501de

Fang, Z. (2012c). The challenges of reading disciplinary texts. In T.L. Jetton and C. Shanahan
(Eds.), *Adolescent literacy in the academic disciplines: General principles and practical
strategies.* (pp. 34-68). New York, NY: The Guilford Press.

Fang, Z. & Coatoam, S. (2013). Disciplinary literacy: What you want to know about it. Journal
of Adolescent & Adult Literacy, 56(8), 627-632. doi: 10.1002/JAAL.190

Fang, Z. & Schleppegrell, M. (2010). Disciplinary literacies across content areas: Supporting
secondary reading through functional language analysis. *Journal of Adolescent & Adult*

Literacy, 53(7), 587-597. doi:10.1598/JAAL.53.7.6

Fisher, D., & Ivey, G. (2005). Literacy and language as learning in content-area classes: A
   departure from "Every teacher a teacher of reading". *Action in Teacher Education*, *27*(2),
   3-11. doi: 10.1080/01626620.2005.10463378

Gates, A. (1917). Recitation as a factor in memorizing. In R.S. Woodworth (Ed.) *Archives of
   Psychology, 40*, (pp. 1-104). New York NY: Science Press.

Geiselhofer, M. A. (2010). *A delphi study to identify components of a new model for teaching
   and learning 21st century literacy skills*. (Doctoral dissertation. Walden University).

Glesne, C. (2011). *Becoming qualitative researchers: An introduction*. Upper Saddle River, NJ:
   Pearson.

Gray, W. (1927). A study of ways and means of reorganizing and improving instruction in
   reading. *The Journal of Educational Research, 15*(3), 166-175. doi:
   10.1080/00220671.1927.10879730

Gray, W. (1933). Summary of reading investigations, July 1, 1931 to June 30, 1932. *The
   Journal of Educational Research*, *26*(6), 401-424. doi:
   10.1080/00220671.1933.10880322

Gray, W. (1935). Reading. *Review of Educational Research, 5*(1), 54-69. doi: 10.2307/1168112

Gray, W.S. (1948). Summary of reading investigations, July 1, 1946 to June 30, 1947. *The
   Journal of Educational Research, 41*(6), 401-435. doi:
   10.1080/00220671.1948.10881619

Grbich C. (2007). Qualitative data analysis: An introduction. London: Sage.

Harris, T. L. (1948). Making reading an effective instrument of learning in the content fields.

Forty-seventh Yearbook, Part II: Reading in the High School and College. Chicago, Ill:

    National Society for the Study of Education.

Heller, R., & Greenleaf, C. L. (2007). Literacy instruction in the content areas: Getting to the

    core of middle and high school improvement. *Alliance for Excellent Education*.

Herber, H. L. (1965). Developing study skills in secondary schools. *Perspectives in Reading, No.*

    4.

Herber, H. L. (1969). Reading to develop, remember, and use ideas. In H. Herber & P.

    Sanders (Eds.), *Research in reading in the content areas: First year report*. (pp. 13-21).

    Syracuse, NY: Syracuse University.

Herber, H. L. (1978). *Teaching reading in content areas*. Upper Saddle River, NJ: Prentice-Hall.

Holsti, O. R. (1969). Content analysis for the social sciences and humanities. Reading. MA:

    Addison-Wesley.

Hotz, P. A. (2014). *Preservice arts teachers' emerging perspectives of literacy skills during a*

    content area literacy course focusing on disciplinary literacy (Doctoral dissertation,

    Oakland University).

Hseih, H. & Shannon, S.E. (2005). Three approaches to qualitative content analysis. *Qualitative*

    Health Research, 15(9), 1277-1288. doi: 10.1177/1049732305276687

Hsu, C. C., & Sandford, B. A. (2007). The Delphi technique: making sense of consensus.

    Practical Assessment, Research & Evaluation, *12*(10), 1-8.

Humble, Á. M. (2009). Technique triangulation for validation in directed content analysis.

    International Journal of Qualitative Methods, *8*(3), 34-51.

    doi:10.1177/160940690900800305

International Literacy Association. (2015). Collaborating for success: The vital role of content

teachers in developing disciplinary literacy with students in grades 6-12. *International*

Literacy Association. Retrieved from http://www.literacyworldwide.org/docs/default

source/where-we-stand/ccssdisciplinary-literacy-statement.pdf?sfvrsn=10

International Reading Association, & National Council of Teachers of English.

(2006). *Standards for middle and high school literacy coaches*. International Reading

Association.

Jetton, T. & Lee. R. (2012). A model for teacher planning with text in the academic

disciplines. In T. Jetton and C. Shanahan (Eds.), *Adolescent literacy in the academic*

disciplines: General principles and practical strategies. (pp. 91-119). New York: The

Guilford Press.

Krippendorff, K. (1989). Content analysis. In E. Barnouw, G. Gerbner, W. Schramm, T. L.

Worth, & L. Gross (Eds.), *International Encyclopedia of Communication, Vol. 1*, (pp.

403-407). New York, NY: Oxford University Press. Retrieved from

http://repository.upenn.edu/asc_papers/226

Krippendorff, K. (2004). Reliability in content analysis: Some common misconceptions and

recommendations. *Human Communication Research, 30*(3), 411-433.

https://doi.org/10.1111/j.1468-2958.2004.tb00738.x

Leary, B.E. (1948). Meeting specific reading problems in the content fields. *Reading in the High*

School and College, Forty-Seventh Yearbook of the NSSE, Part II, 136-179. Chicago, Ill.:

University of Chicago Press.

Lent, R. C. (2009). *Literacy for real: Reading, thinking, and learning in the content areas*. New

York, NY: Teachers College Press.

Lent, R.C. (2016). *This is disciplinary literacy*. Thousand Oaks, CA: Corwin.

Linstone, H. A., & Turoff, M. (1975). *The Delphi method: techniques and applications*. Reading,

    MA: Addison-Wesley.

Ludwig, B. (1997). Predicting the future: Have you considered using the delphi methodology.

    Journal of Extension, *35*(5), 1-4.

Manzo, U. C., Manzo, A. V., & Thomas, M. M. (2009). *Content area literacy: A framework for*

    reading-based instruction. (5th ed.). Hoboken, NJ: John Wiley & Sons.

McCallister, J. (1930a). Guiding pupils' reading activities in the study of content subjects. *The*

    Elementary School Journal, 31(4). 271-284, doi: 10.1086/456561

McCallister, J. (1930b). Reading difficulties in studying content subjects. *The Elementary*

    School Journal, 31(3), 191-201. doi: 10.1086/456545

McConachie, S. M., & Petrosky, A. R. (Eds.). (2009). *Content matters: A disciplinary literacy*

    approach to improving student learning. San Francisco, CA: John Wiley & Sons.

McDermott, K., & Naaz, F. (2014). Is recitation an effective tool for adult learners? *Journal of*

    Applied Research in Memory and Cognition, 3(3), 207-213. doi:

    10.1016/j.jarmac.2014.06.006

McHugh, M. L. (2012). Interrater reliability: the kappa statistic. *Biochemia Medica: Biochemia*

    Medica, *22*(3), 276-282. doi: 10.11613/BM.2012.031

Mitroff, I. & Turoff, M. (1975). Philosophical and methodological foundations of delphi. In

    Linstone, H. A., & Turoff, M. (Eds.). *The delphi method: Techniques and applications*.

    (pp. 17-34). Reading, MA: Addison-Wesley.

Moje, E. (2007). Developing socially just subject-matter instruction: A review of

    the literature on disciplinary literacy teaching. *Review of research in education, 31*(1), 1-

    44. doi: 10.3102/0091732X07300046

Moje, E. (2008). Foregrounding the disciplines in secondary literacy teaching and learning: A

    call for change. *Journal of Adolescent & Adult Literacy, 52*(2), 96-107. doi:

    10.1598/JAAL.52.2.1

Moje, E., Stockdill, D., Kim, K., and Kim, H. (2011). The role of text in disciplinary learning. In

    M. Kamil, P. Pearson, E. Moje, & P. Afflerback, (Eds.). *Handbook of Reading Research,*

    Volume IV, (pp. 453-486). New York, NY: Routledge.

Moore, D. W., Readence, J. E., & Rickelman, R. J. (1983). An historical exploration of content

    area reading instruction. *Reading Research Quarterly*, 419-438. doi: 10.2307/747377

Mraz, M., Rickelman, R., & Vacca, R. (2009). Content area reading: Past, present, and

    future. In K. Wood & W. Blanton (Eds.), *Literacy instruction for adolescents.* (pp. 77-

    91). New York, NY: The Guilford Press.

National Governors Association (2010). *Common core state standards*. Washington D.C.:

    National Governors Association Center for Best Practices.

Nolan, J. (1984). Reading the content area of mathematics. In M. Dupuis (Ed.). *Reading in the*

    Content Areas: Research for Teachers, (pp. 28-41). Newark, DE:

    International Reading Association.

O'Brien, D., Stewart, R., & Moje, E. (1995). Why content literacy is difficult to infuse

    into the secondary school: Complexities of curriculum, pedagogy, and school culture.

    Reading Research Quarterly, 30(3), 442-463. doi: 10.2307/747625

Okoli, C., & Pawlowski, S. D. (2004). The Delphi method as a research tool: an example, design

    considerations and applications. *Information & Management*, *42*(1), 15-29. Doi:

    10.1016/j.im.2003.11.002

Pearce, D. L., & Bader, L. A. (1986). The effect of unit construction upon teachers' use of

content reading and writing strategies. *Journal of Reading*, *30*(2), 130-135.

Pearce, D. L., & Reynolds, N. G. (2004). Recommended procedures for reading mathematics in

current and past content/secondary reading textbooks. In J. Dugan, P. Linder, M.

Sampson, & B. Brancato (Eds.) *Celebrating the power of literacy. The twenty-sixth*

yearbook: A peer reviewed publication of the college of reading association [Papers

from the College Reading Association Conference, 2004], (pp. 394-412). Provo, UT:

Brigham Young University.

Powell, R. L. (2018). *"We're not going to talk about that:" A qualitative case study of three*

elementary teachers' experiences integrating literacy and social studies (Doctoral

dissertation, University of South Florida).

Rainey, E. C., Maher, B. L., Coupland, D., Franchi, R., & Moje, E. B. (2018). But what does it

look like? Illustrations of disciplinary literacy teaching in two content areas. *Journal of*

Adolescent & Adult Literacy, *61*(4), 371-379. doi: 10.1002/jaal.669

Readence, J. E., Bean, T. W., & Baldwin, R. S. (1998). *Content area literacy: An integrated*

Approach (6th ed.). Dubuque, IA: Kendall Hunt.

Rieger, W. G. (1986). Directions in Delphi developments: Dissertations and their quality.

Technological Forecasting and Social Change, *29*(2), 195-204. doi: 10.1016/0040

1625(86)90063-6

Riggs, W.E. (1983). The delphi technique: An experimental evaluation. T*echnological*

Forecasting & Social Change 23(1), 89-94. Doi: 10.1016/0400-1625*83)90073-2

Robinson, H. A. (1968). Corrective reading in the high school classroom. *Perspectives in*

reading. No. 6.

Robison, H. A. (1975). *Teaching reading and study strategies: The content areas*. Boston, MA.:

Allyn and Bacon, Inc.

Robinson, H. A., Faraone, V., Hittleman, D.R. & Unruh, E. (1990). *Reading comprehension instruction 1783-1987: A review of trends and research*. Newark, DE: International Reading Association.

Saldaña, J. (2011). *Fundamentals of qualitative research*. New York, NY: Oxford University Press.

Saldaña, J. (2013). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage.

Shanahan, C. (2012). How disciplinary experts read. In T. Jetton and C. Shanahan (Eds.), *Adolescent literacy in the academic disciplines: General principles and practical strategies.* New York, NY: The Guilford Press.

Shanahan, T. (2011). Developing effective reading curricula beyond the primary grades. In T.V. Rasinski, (Ed.). *Rebuilding the Foundation: Effective Reading Instruction for 21st Century Literacy*. Bloomington, IN: Solution Tree Press.

Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content-area literacy. *Harvard Educational Review*,*78*(1), 40-59. doi: 10.17763/haer.78.1v62444321p602101

Shanahan, T., & Shanahan, C. (2012). What is disciplinary literacy and why does it matter?. *Topics in language disorders*, *32*(1), 7-18. doi: 10.1097/TLD.0b013e318244557a

Skulmoski, G. J., Hartman, F. T., & Krahn, J. (2007). The Delphi method for graduate research. *Journal of Information Technology Education: Research*, *6*(1), 1-21. doi: 10.28945/199

Smith, N. B. (2002). *American reading instruction*. Newark, DE.: International Reading Association.

Strang, R. M., & Bracken, D. K. (1957). *Making better readers*. Lexington, MA.: Heath.

Strang, R. (1966). Developing reading skills in the content areas. *The High School Journal, 49*(7), 301-306. Retrieved from

http://www.jstor.org.ezproxy.lib.utexas.edu/stable/40366012

Strang, R. M., Traxler, A. E., & McCullough, C. M. (1967). *The improvement of reading*. New York, NY: McGraw-Hill.

Suarez, K. (2011). *Graphic organizers and higher order thinking skills with nonfiction text* (Doctoral dissertation, Walden University).

Thangaratinam, S., & Redman, C. W. (2005). The delphi technique. *The obstetrician & gynaecologist*, *7*(2), 120-125. doi: 10.1576/toag.7.2.120.27071

Thorndike, E. L. (1917). Reading as reasoning: A study of mistakes in paragraph reading. *Journal of Educational Psychology, 8*(6), 323-332. doi:10.1037/h0075325

Vacca, R. (1975). The development of a functional reading strategy: Implications for content area instruction. *The Journal of Educational Research, 69*(3), 108-112, doi: 10.1080/00220671.1975.10884845

Vacca, R. (1989). "High school reading programs: Out of the past and into the future." In S.B. Wepner, D.S. Strickland, & D,J. Quatroche (Eds.) *The administration and supervision of reading programs.* (pp. 93-105). New York, NY: Teachers College.

Vacca, R. (2002). From efficient decoders to strategic readers. *Educational Leadership*, *60*(3), 6-11.

Vacca. R., (2013). Adolescent literacy: Old school, new school, your school. In S.B. Wepner, D.S. Strickland, & D.J. Quatroche (Eds.). *The administration and supervision of reading programs,* (5th ed). New York, NY: Teachers College Press.

Vacca, R. & Mraz, M. (2011). Content-area reading instruction. In T.V. Rasinski, (Ed.).

Rebuilding the Foundation: Effective Reading Instruction for 21st Century Literacy. (pp. 271-291). Bloomington, IN: Solution Tree Press.

Vacca, R. & Vacca, J. (1996). *Content area reading* (5th ed.). New York, NY: Harper Collins.

Venezky, R. (1987). A history of the american reading textbook. *The Elementary School Journal, 87*(3), 246-265.

Weaver, W. T. (1971). The delphi forecasting method. *The Phi Delta Kappan*, *52*(5), 267-271.

Weber, R. P. (1990). *Basic content analysis* (No. 49). Beverly Hills, CA.: Sage.

Wegner, M. F. (2010). *Using the Delphi questionnaire technique to create a reading comprehension resource guide for middle school science teachers* (Doctoral dissertation, Walden University).

Whipple, G. M. (Ed.). (1925). *Report of the National Committee on Reading* (Twenty-fourth Yearbook of the National Society for the Study of Education, Part I). Bloomington, IL: Public School Publishing.

Whipple, G.M. Gray, W.S., & National Society for the Study of Education. Committee on Reading. (1937). *The teaching of reading: A second report*, Chicago, Ill.: The Society.

White, M. D., & Marsh, E. E. (2006). Content analysis: A flexible methodology. *Library trends*, *55*(1), 22-45. doi: 10.1353/lib.20060053

Wilson, A., & Chavez, K. (2014). *Reading and representing across the content areas: A classroom guide*. New York, NY: Teachers College Press.

Wood, R. (2017). *Social studies teachers' beliefs regarding and understanding of teaching content area reading skills: A multi-case study* (Doctoral dissertation, Capella University).

Yousuf, M. (2007). Using experts' opinions through Delphi technique. *Practical Assessment, Research & Evaluation*, *12*(4), 1-8.

Zunker, N. (2009). *A Modified Delphi study to identify the significant works pertaining to the understanding of reading comprehension and content analysis of the identified works* (Doctoral dissertation, Texas A&M University-Corpus Christi).

LIST OF APPENDICES

Appendix A

List of Proposed Participants Submitted for Review

- Timothy Shanahan (University of Illinois)
- Cynthia Shanahan (University of Illinois) *
- Zhihui Fang (University of Florida)
- Catherine Snow (Harvard School of Education)
- Elizabeth B. Moje (University of Michigan)
- Mary J. Schleppegrell (University of Michigan) *
- David O'Brien (University of Minnesota)
- Tom Bean (Old Dominion University)
- Cynthia Greenleaf (WestEd)
- P. David Pearson (University of California, Berkley)
- Doug Buehl (Education Consultant)
- Douglas Fisher (San Diego State University)
- Nancy Frey (San Diego State University) *
- Cristina Alfaro (San Diego State University) *
- Diane Lapp (San Diego State University) *
- Maria C. Grant (California State University)
- Roni Jo Draper (Brigham Young University)
- Donna Alvermann (University of Georgia)
- David Reinking (Clemson University)
- Maryann Mraz (UNC Charlotte)
- Evan Ortlieb (St. Johns University) **
- Dr. Wolfram Verlaan (University of Alabama-Huntsville) **
- Dr. Amy Wilson-Lopez (Utah State University) ***
- Dr. Barbara Guzzetti (Arizona State University) ***

* - deleted by committee member
** - added by committee member
*** - recommended by another participant

Appendix B

Knowledge Resource Nomination Worksheet

Potential Participant	Research Interest(s)	Literacy Publications Attributed to Potential Participant	Presentations and/or Other Notable Contributions
Dr. Timothy Shanahan (University of Illinois at Chicago) Contact: shanahan@uic.edu 208 W. Washington St., 711 Chicago, IL 60606 312-933-2835 Author website - https://shanahanonliteracy.com/	As noted on curriculum vita (CV), "his research emphasizes the connections between reading and writing, literacy in the disciplines, and improvement of reading achievement."	As noted on CV, there are over 100 publications listed, including scholarly papers, book chapters, and journal publications. University library search – 54 publications found	• Conference and other presentations since 1982 • Member of numerous Editorial Boards • Reading Hall of Fame inductee 2017
Dr. Zhihui Fang (University of Florida) Contact: University of Florida 2423 Norman Hall PO Box 117048 Gainesville, FL 32611 352-273-4231 Fax: 352-392-9193 zfang@coe.ufl.edu School website - https://education.ufl.edu/faculty/fang-zhihui/	As noted on his university webpage – "His areas of expertise include language and literacy education, functional linguistics, and teacher education. His recent research focuses on the language demands of reading and writing in the content areas. He is particularly interested in exploring the use of evidence-based language and literacy practices to support disciplinary learning and socialization."	As noted on the university webpage, 20 selected publications listed. University library search – 25 publications located	• No presentations listed • Served on numerous Editorial Boards

Appendix B

Knowledge Resource Nomination Worksheet

Name/Contact	Research	Publications	Presentations/Service
Dr. Catherine Snow (Harvard School of Education) Contact: catherine_snow@gse.harvard.edu 617-495-3563 Fax: 617-495-5771 School website – https://www.gse.harvard.edu/faculty/catherine-snow	As noted on university webpage – "Her current research activities include a study of how Boston Public School early childhood classrooms are supporting children's development, and participation in a long-standing research-practice partnership (the Strategic Education Research Partnership, SERP) that is developing curricular tools to support teachers in introducing innovative classroom practices."	As noted on the university webpage, 17 publications listed. University library search – 56 publications found	• No presentations listed. Served as: • President of the American Educational Research Association • Chair of RAND Reading Study Group
Dr. Elizabeth B. Moje (University of Michigan) Contact: Room 1110 Mailbox 4215/4218 734.647.9571 moje@umich.edu School website – http://www.soe.umich.edu/people/profile/elizabeth_birr_moje/	As noted on university webpage – "She is particularly interested in the intersections between the disciplinary literacies of school and the literacy practices of youth outside of school. She also studies how youth draw from home, community, ethnic, popular, and school cultures to *make* cultures and to enact identities."	As noted on CV, there are over 100 publications listed, including scholarly papers, books, book chapters, and journal publications. University library search – 56 publications found	• Conference presentations since 1989 • Member of numerous Editorial Boards • Reading Hall of Fame inductee 2017

Appendix B

Knowledge Resource Nomination Worksheet

Dr. David O'Brien (University of Minnesota) Contact: Curriculum and Instruction Room 358 Peik Hall 159 Pillsbury Dr S E 612-625-5337 dobrien@umn.edu School website – http://www.cehd.umn.edu/ci/peop le/obrien.html	As noted on university webpage – "Adolescent literacy, literacy across disciplines; digital literacies: construction of supportive programs for adolescents and struggling adolescent readers; using literacy across the curriculum; using digital literacies to engage adolescents; bridging traditional print literacies with multimodal literacies and new media."	As noted on university webpage, 10 selected publications listed. University library search – 26 publications found	• University webpage lists ten selected scholarly presentations.
Dr. Tom Bean (Old Dominion University) Contact: 3117 Education Building Norfolk, VA 23529 757-683-3283 tbean@odu.edu School website - https://www.odu.edu/directory/pe ople/t/tbean#profiletab=1	As noted on university webpage – "Digital story telling related to human rights issues in young adult literature. The integration of science and sailing with middle school students. Cosmopolitan and transmediation theory applied to young adult literature and digital story telling.	As noted on university webpage – thirteen selected publications listed, including journal publications, books, and book chapters. Webpage biography notes that Dr. Bean has over 100 publications. University library search – 3 publications found	

Appendix B

Knowledge Resource Nomination Worksheet

Dr. Cynthia Greenleaf (WestEd) Contact: 510.302.4222 300 Lakeside Drive, 25th Floor, Oakland, CA 94612-3540 https://www.wested.org/personnel/cynthia-greenleaf/ https://readingapprenticeship.org/	Reading Apprenticeship framework	University library search – 32 publications found	
Dr. P. David Pearson (University of California, Berkley) Contact: 5645 Tolman Hall (510) 543-6508 ppearson@berkeley.edu https://gse.berkeley.edu/people/p-david-pearson	As noted on university webpage, his current research focuses on literacy history and policy.	As noted on CV, there are over 100 publications listed, including scholarly papers, books, book chapters, and journal publications.	• Literacy presentations since 1970 • Served on numerous Editorial Boards • Recipient of the 2010 AERA Distinguished Contributions to Research in Education Award
Dr. Douglas Fisher (San Diego State University) Contact: Office: NE162L (619) 594-2507 dfisher@mail.sdsu.edu http://go.sdsu.edu/education/edl/fisher.aspx https://www.fisherandfrey.com/		As noted on the university webpage, 55 publications listed. As noted on CV, there are over 100 publications listed, including scholarly papers, books, book chapters, textbooks, and journal publications. University library search – 121 publications found	• Served on numerous Editorial Boards Over a 100 national, state, and local conference presentations

Appendix B

Knowledge Resource Nomination Worksheet

| Dr. Roni Jo Draper (Brigham Young University) Contact: 801-422-4960 roni_jo_draper@byu.edu https://education.byu.edu/director y/view/roni-jo-draper | According to university webpage – "I am interested in the texts and literacies used to participate in disciplinary communities (particularly in the various STEM disciplines and the arts). I am also interested in understanding how to prepare teachers to create safe and affirming spaces where all young people can learn, grow, and thrive." | As noted on the university webpage, 6 selected publications listed. As noted on CV, there are over 50 publications listed, including books, book chapters, and journal publications. University library search – 27 publications found | Over a 100 national, state, and local conference presentations |
| Dr. Donna Alvermann (University of Georgia) Contact: dalverman@uga.edu Department of Language and Literacy Education 309 Aderhold Hall University of Georgia Athens, GA 30602-7123 706-308-7195 https://coe.uga.edu/directory/peop le/dalverma | As noted on school website – • adolescents' literacies • written communication • critical media literacy • social media sites • youth media literacies • democratization of online text production • actor-network theory • new materialisms • alternative forms of dissertation research • Foucault's genealogical approach to analyzing historical literacy events | As noted on CV, there are over 100 publications listed, including scholarly papers, books, book chapters, and journal publications. University library search – 67 publications found | • Conference presenter since 1981 • Served on numerous Editorial Boards • Reading Hall of Fame inductee - 1999 |

Appendix B

Knowledge Resource Nomination Worksheet

Dr. David Reinking (Clemson University) Contact: Eugene T. Moore School of Education 418 Tillman Hall Clemson University Clemson, SC 29634 (864)-656-0565 reinkin@clemson.edu FAX: (864)-656-5109 https://www.davidreinking.info/biography	As per CV – • Influences of digital reading and writing on literacy and literacy development • Design-based approaches to education research • The professional development of teachers	As noted on CV, there are over 100 publications listed, including scholarly papers, books, book chapters, and journal publications. University library search – 30 publications found	• Reading Hall of Fame inductee – 2008 • Served on numerous Editorial Boards
Dr. Maryann Mraz (UNC Charlotte) Contact: 704-687-8893 memraz@uncc.edu https://reel.uncc.edu/directory/maryann-mraz	As noted on school webpage – Content Area Literacy Early Literacy Literacy Coaching Professional Development	As noted on the university webpage, 13 selected publications listed. University library search – 19 publications found	
Dr. Evan Ortlieb (St. Johns University) Contact: 718-990-2136 ortliebe@stjohns.edu http://www.stjohns.edu/academics/bio/evan-t-ortlieb	As noted on school webpage – Struggling Readers, Preservice/Reading Teacher Preparation, Language Diversity, Differentiated Reading Instruction	As noted on the university webpage, 10 selected publications listed. University library search – 43 publications found	

Knowledge Resource Nomination Worksheet

ReLeah Lent (Published author on disciplinary literacy and educational consultant) Contact: rlent@tds.net http://releahlent.com/		According to author's website – Authored three books and six other publications. University library search – 3 publications found	
Dr. Sharon Vaughn (Director of Reading Institute - Meadow Center at University of Texas) Contact: 512 232 2357 srvaughn@austin.utexas.edu	Intervention research for students with learning problems and disabilities	University library search – 37 publications found.	Member of numerous Editorial Boards
Dr. Wolfram Verlaan (University of Alabama Huntsville) Contact: University of Alabama in Huntsville Room 314 Roberts Hall Phone: 256-824-2326 Email: wolfram.verlaan@uah.edu	As noted on CV – "Relationship between oral language and reading comprehension, intervention programs for struggling readers, adolescent and content area literacy, teacher preparation and instructional effectiveness."	As noted on CV, there are 17 publications listed, including book chapters and journal publications. University library search – 3 publications found	Over 30 conference presentations

Appendix B

Knowledge Resource Nomination Worksheet

Dr. Kylene Beers (Published author on content literacy)	Five books addressing reading and writing University library search – 8 publications found	Served as President of NCTE (2008-2009)
Doug Buehl (Education Consultant) drbuehl@sbcglobal.net https://www.stenhouse.com/authors/doug-buehl https://thinkcerca.com/bio/doug-buehl/	University library search – 4 publications found Author website noted the following publications: • Classroom Strategies for Interactive Learning (3rd Edition, 2009) • Developing Readers in the Academic Disciplines (2011) Co-authored – • Reading and the High School Student: Strategies to Enhance Literacy (2nd Edition, 2007) • Strategies to Enhance Literacy and Learning in Middle School Content Area Classrooms (3rd Edition, 2007)	

Appendix C

Letter Requesting Participant Participation

Dear Dr._____,

My name is Kelli Powell and I am a doctoral candidate at Texas A&M University-Corpus Christi. I am currently working on my dissertation with the guidance of my committee members, Dr. Bethanie Pletcher, Dr. Daniel Pearce, and Dr. Kelli Bippert, for the purpose of defining disciplinary literacy and how it compares to content literacy as well as identifying significant works in the field of disciplinary literacy.

Based on the review of the literature, you were identified as an expert in the field of secondary literacy, and I believe you will make a significant contribution to my study. I would like to invite you to participate as an expert panelist in a Delphi study. As an expert panelist, you will provide responses to questionnaires over a short period of time. The first questionnaire will consist of a series of open-ended questions asking you to share your thoughts on disciplinary literacy and content literacy as well as identify significant works and why you chose those works. For the second questionnaire, you will be asked to rank the responses from the first iteration using a Likert scale and provide a brief explanation for your ranking. For the final iteration, you will be presented the median responses from the second round and a summary of each of the reasons for the responses at which time you will be asked to provide a reflection. All communication will be via email and responses will be recorded using Google applications unless you indicate a preference to respond using a hard copy of the questionnaires.

I recognize you have a demanding schedule. Would you please consider taking a few minutes of your time to participate in my study? I will follow up with you in one week at which time I will inquire about your participation or if you prefer you can reply directly to this initial email request.

If you have any questions, please contact me at 361-510-5424 or email me at

kpowell2@islander.tamucc.edu.

Attached, please find an information sheet for you to review.

Thank you for your consideration.

Respectfully,

Kelli Powell

Appendix D

Information Sheet Given to Potential Participants

WORKING TITLE: Defining Disciplinary Literacy and the Content Attributes of Texts to Support Disciplinary Literacy Instructional Practices: A Delphi Study

Introduction
The purpose of this form is to provide you information that may affect your decision as to whether or not to participate in this research study. By providing responses to questions, you are consenting to participate in the study. By participating in this study, you are also certifying that you are 18 years of age or older. Please do not respond to questions if you do not consent to participate in the study.

You have been asked to participate in a research project studying disciplinary literacy. The purpose of this study is to define disciplinary literacy, seek to understand how disciplinary literacy compares to content literacy, and identify significant works in the field of disciplinary literacy. You were selected to be a possible participant because you were identified as an expert in the field of secondary literacy based on a review of the literature.

What will I be asked to do?
If you agree to participate in this study, you will be asked to participate in three rounds of responses. The first iteration of the study consists of three open ended questions. For the second iteration, you will be asked to rank the responses from the first iteration using a Likert scale and provide a brief explanation for the ranking. For the third and final iteration, you will be presented the median responses from the second round and a summary of each of the reasons for the responses. Participants will be asked to reflect on the responses and give a final and possibly revised response. Each round of responses will take approximately 30 minutes to complete. This study will take place over a three month period.

What are the risks involved in this study?
The risks associated in this study are minimal and are not greater than risks ordinarily encountered in daily life.

What are the possible benefits of this study?
You will receive no direct benefit from participating in this study; however, your participation will contribute to the understanding of disciplinary literacy in the area of secondary literacy education.

Do I have to participate?
No. Your participation is voluntary. You may decide not to participate or to withdraw at any time without your current or future relations with Texas A&M University-Corpus Christi being affected.

Who will know about my participation in this research study?

This study is confidential. You will be identified by an ID number. Your ID number will be associated with your email address and stored in a password protected log. Only the principal investigator (PI) and dissertation supervisor will have access to this information. No identifiers linking you to this study will be included in any sort of report that may be published.

Whom do I contact with questions about the research?
If you have questions regarding this study, you may contact Kelli Powell, PI, at 361-510-5424 or kpowell2@islander.tamucc.edu

Whom do I contact about my rights as a research participant?
This research study has been reviewed by the Institutional Review Board and/or the Office of Research Compliance at Texas A&M University-Corpus Christi. To report a problem or for questions regarding your rights as a research participant, contact Caroline Lutz, JD, Research Compliance and Export Control Officer: (361) 825-2497 or caroline.lutz@tamucc.edu.

Appendix E

Summaries of Participants' Rationale Statements for Disciplinary Literacy Definitions

Disciplinary literacy is the strategic use of cognitive processes required to understand discipline-specific texts.

Summary of rating rationales:

The use of cognitive processes is inherent to reading all texts; however, the definition does not fully address the full range of student needs when engaging with disciplinary texts. Nor does the definition fully address the discourses and traditions of any given discipline. Additionally, the definition may need further development for teachers to fully understand and embrace it for use in the classroom.

Disciplinary literacy moves beyond generic metacognitive strategies to utilize the particular approaches needed to be or become literate in a discipline.

Summary of rating rationales:

The definition is representative of scholarly work done in the area of disciplinary literacy and reflects the need for different approaches to understanding disciplinary texts. While this statement recognizes the use of metacognitive strategies, thus acknowledging the contribution of content literacy to build foundational knowledge, it does not fully address what it means to "move beyond" these strategies. The statement raises additional questions - what does it mean to be literate in a discipline?; how does the approach to literacy in science differ from that in social studies, math, and language arts? With the unanswered questions, there is a concern as to how classroom teachers would interpret this definition in the field.

Disciplinary literacy moves beyond knowing the 'what' of disciplinary knowledge to the 'how' and 'why' - an understanding of how and why experts in a field of study create, communicate, and share disciplinary knowledge, which enables students to navigate a wide range of disciplinary texts.

Summary of rating rationales:

This definition places more emphasis on disciplinary literacy as an act of building disciplinary knowledge often associated with the practices of classroom teachers. Further, this definition emphasizes the use of cognitive processes and deliberate strategy selection to create disciplinary knowledge. Experts in a field of study do not examine the how and why of their discipline's discourses; therefore, the significance of the 'how' and 'why' may be more appropriate for students in postsecondary settings. The definition is too lengthy and not practitioner friendly, specifically for K-12.

Disciplinary literacy is the intersection of the literacy practices, the utilized language forms, and the epistemology of the discipline.

Summary of rating rationales:

The definition addresses different aspects of disciplinary literacy; however, the definition is not practitioner friendly and does not clearly address the discourses of a discipline. The epistemology of a discipline would need further clarification. This definition is more reflective of content area study and does not reflect the depth of understanding that comes from creating knowledge within any given discipline.

Disciplinary literacy is the use of discipline-specific literacy tools (reading, writing, speaking, listening, and reasoning) used by experts in order to participate in a subject area.

Summary of rating rationales:

While the definition is concise, the phrase "literacy tools" does not accurately reflect what experts in the field do. Literacy practices would be more appropriate. Additionally, the definition is not inclusive of disciplines that have a performance component.

Appendix F

Summaries of Participants' Rationale Statements for Content Literacy and Disciplinary Literacy

Statements

Content literacy is a set of skills applied to understand content while disciplinary literacy is a set of skills constructed within the discipline reflecting the discipline's texts, discourses, and epistemology.

Summary of rating rationales:

This statement attempts to establish a difference between the two; however, the terms "content" here and "set of skills" needs further exploration. As written, the statement may actually convey a belief that there may be little difference between content literacy and disciplinary literacy. In regard to the term "content," any discipline consists of a content of knowledge thus positioning the two terms, content and disciplinary, in this manner is problematic Additionally, in practice, both content literacy and disciplinary literacy apply skills in order for students to fully participate in the understanding of and construction of knowledge. Perhaps the discussion should center around if content literacy or disciplinary literacy have, or have ever had, a "set of skills" or if students are using cognitive and metacognitive strategies in lieu of skills.

Content literacy refers to general literacy strategies used to support the development of background knowledge and content learning. Disciplinary literacy refers to specific literacy strategies and practices of a field of study.

Summary of rating rationales:

Disciplinary literacy does have specific literacy practices that are situated within a discipline; however, any engagement with discipline texts would benefit from the use of generic (not general) strategies to read texts, e.g. monitoring comprehension. The statement does make a

distinction between generic and discipline specific without placing the value of one over the other. Disciplinary literacy links strategies, discipline specific and generic, to successfully negotiate texts and demonstrate one's understanding. One concern with the statement is that it is not inclusive of all disciplines, specifically the arts where there are performance components.

Content literacy emphasizes understanding text. Disciplinary literacy extends content literacy so that texts may be used authentically for real world application.

Summary of rating rationales:

In this statement, content literacy is limited to understanding text and does not address how students show their understanding. Disciplinary literacy is considered more than an extension of content literacy; disciplinary literacy is the use of disciplinary practices by those in the discipline. Both content literacy and disciplinary literacy use texts authentically and for real world application.

Both content literacy and disciplinary literacy use cognitive strategies for instruction. Disciplinary literacy processes are created within a discipline and content literacy processes are applied to a discipline.

Summary of rating rationales:

There are cognitive strategies that are used when reading any text, e.g. generating inferences or using charts and other visual representations that applied in multiple disciplines. Disciplinary literacy practices remain an area that needs further research and clarification as to what the practices are for each discipline. This statement seems to position disciplinary processes as separate when they may overlap with content literacy practices as one works within a discipline.

Appendix G

First Iteration - Data Disciplinary Literacy Theory Categories (Moje, 2007)

Cognitive Literacy Processes	Epistemological Processes of the Disciplines	Linguistic Processes of the Disciplines	Disciplinary Literacy as Cultural Navigation
I define disciplinary literacy as the ability to employ those cognitive processes involved in the reading act that are required to comprehend discipline specific text to the extent necessary to accomplish specific goals; in this definition, the term goal can have a variety of connotations, such as pleasure (e.g. reading a spy thriller), studying (e.g. understand the differences between mitosis and meiosis), reviewing an article submitted to a research journal, etc. (107)	Oral and written production and comprehension of the language forms and the epistemic commitments honored within different disciplines. (100)	Oral and written production and comprehension of the language forms and the epistemic commitments honored within different disciplines. (100)	Disciplinary literacy seeks to provide students with the skills and mind-set to think like the people in who work in their respective content areas (e.g. historians, mathematicians, scientists). This means understanding the shared methods of reading, writing, thinking, and reasoning as they are applied in each academic field. (104)
	The intersection of literacy processes and practices and disciplinary thinking with a focus on the texts and discourses of disciplines that support student learning. (101)		Disciplinary literacy represents a significant transition from more generalized reading behaviors to highly contextualized reading demands—reading, writing, and thinking through different disciplinary lenses. Students are called on, certainly in the later elementary grades and most definitely during the middle and
			high school years, to delve into increasingly complex texts that reflect the knowledge, processes, and wisdom—the discourses—of a host of academic disciplines. Hence, disciplinary literacy is not one compact set of highly skilled behaviors and routines but many. Students are expected to grow their capacities to access communications through texts as disparate as literary fiction, mathematics, the sciences, the social sciences, technical fields, health and fitness, art, music, and others. When people think of being literate in a discipline, they tend to focus on being conversant with key information and understandings— facts, concepts, explanations, ideas. Students immersed in disciplinary study are certainly engaged in expanding their content knowledge, the "what" a literate person knows, in biology, in history, in mathematics, and in other subjects. But disciplinary literacy equally involves building disciplinary knowledge, the "how" and "why" of a discipline's approach to knowledge and examination of our world. In essence, learners need to appreciate the inner workings of a

Appendix G

First Iteration - Data Disciplinary Literacy Theory Categories (Moje, 2007)

			discipline—how experts within a discipline create, communicate, and share disciplinary knowledge. Disciplinary literacy instruction is undertaken in the service of acquiring disciplinary knowledge, insights, and practices, so that students expand their abilities to successfully interact with the wide range of disciplinary texts and communicate their understandings through speaking, writing, applying, and creating in ways that conform to disciplinary expectations. (108)
	Research in this area, while still relatively new, explores the particularities of various disciplines and the literacy practices relevant to those particularities. For example, sourcing in history to evaluate historical accounts requires that historians and students in this discipline consider the source and accuracy of information. Thus, disciplinary literacy moves beyond generic metacognitive strategies (e.g. summarizing) to encompass the particular approaches to being or becoming literate in a discipline. (102)		
	Reading, writing, speaking, and listening specific to various professions or expert areas (103)		
	being able to assume the frame of mind or funds of knowledge related to learning as an expert in a topical field (105)		
	Students are able to utilize discipline-specific literacy tools such as reading, writing, thinking, reasoning, and speaking to participate in the work of each subject area, much as experts might. (106)		

Appendix H

First Iteration - Data Approaches to Developing Content Area Literacies Categories

(Fang, 2012a)

Cognitive	Sociocultural	Linguistic	Critical	Does not align with Approaches to Disciplinary Literacy Instruction
I define disciplinary literacy as the ability to <u>employ those cognitive processes involved in the reading act that are required to comprehend discipline specific text to the extent necessary to accomplish specific goals</u>; in this definition, the term goal can have a variety of connotations, such as pleasure (e.g. reading a spy thriller), studying (e.g. understand the differences between mitosis and meiosis), reviewing an article submitted to a research journal, etc. (107)		<u>Oral and written production and comprehension of the language forms</u> and the epistemic commitments honored within different disciplines. (100)		Research in this area, while still relatively new, explores the <u>particularities of various disciplines and the literacy practices relevant to those particularities.</u> For example, sourcing in history to evaluate historical accounts requires that historians and students in this discipline consider the source and accuracy of information. Thus, disciplinary literacy moves beyond generic metacognitive strategies (e.g. summarizing) to encompass the particular approaches to being or becoming literate in a discipline. (102)
		The intersection of literacy processes and practices and disciplinary thinking with <u>a focus on the texts and discourses of disciplines that support student learning.</u> (101)		<u>Reading, writing, speaking, and listening specific to various professions or expert areas</u> (103)
				Disciplinary literacy seeks to provide students with the <u>skills and mind-set to think like the people in who work in their respective content areas</u> (e.g. historians, mathematicians, scientists). This means understanding the shared methods of reading, writing, thinking, and reasoning as they are applied in each academic field. (104)
				<u>being able to assume the frame of mind or funds of knowledge related to learning as an expert in a topical field</u> (105)
				Students are able to <u>utilize discipline-specific literacy tools such as reading, writing, thinking, reasoning, and speaking to participate in the work of each subject area, much as experts might</u>. (106)
				Disciplinary literacy represents a significant transition from more generalized reading behaviors to highly contextualized reading demands—<u>reading,</u>

First Iteration - Data Approaches to Developing Content Literacies Area Categories

(Fang, 2012a)

				writing, and thinking through different disciplinary lenses. Students are called on, certainly in the later elementary grades and most definitely during the middle and high school years, to delve into increasingly complex texts that reflect the knowledge, processes, and wisdom—the discourses—of a host of academic disciplines. Hence, disciplinary literacy is not one compact set of highly skilled behaviors and routines but many. Students are expected to grow their capacities to access communications through texts as disparate as literary fiction, mathematics, the sciences, the social sciences, technical fields, health and fitness, art, music, and others. When people think of being literate in a discipline, they tend to focus on being conversant with key information and understandings—facts, concepts, explanations, ideas. Students immersed in disciplinary study are
				certainly engaged in expanding their content knowledge, the "what" a literate person knows, in biology, in history, in mathematics, and in other subjects. But disciplinary literacy equally involves building disciplinary knowledge, the "how" and "why" of a discipline's approach to knowledge and examination of our world. In essence, learners need to appreciate the inner workings of a discipline—how experts within a discipline create, communicate, and share disciplinary knowledge. Disciplinary literacy instruction is undertaken in the service of acquiring disciplinary knowledge, insights, and practices, so that students expand their abilities to successfully interact with the wide range of disciplinary texts and communicate their understandings through speaking, writing, applying, and creating in ways that conform to disciplinary expectations. (108)

First Iteration - Participants' Responses to Research Question 2

How is disciplinary literacy similar to content literacy and how is it different from content literacy?
The term 'disciplinary literacy' focuses one's attention more on ways of talking and thinking (forms of argument specific to the different disciplines), rather than on the (also crucial) background knowledge required for adequate performance within the discipline. (Participant 100)
This is very controversial. In one camp, folks believe that these two are totally distinct, with particular attention to separating the cognitive strategies-based focus of content literacy and disciplinary literacy. In the camp in which i and my grad assistants reside, the two are similar in that cognitive strategies can be used to scaffold instruction, but only at the service of the particular kind of learning that is embedded in the discipline. The primary contrast, as I see it, is that disciplinary literacy is not "imported into" the discipline as content literacy (and previously content reading and writing across the curriculum) were. Rather disciplinary literacy is constructed from within the discipline--its texts, its discourses, its historically grounded focus on how texts, discourses, and learning intersect. (Participant 101)
In general, content area literacy provides an array of cognitive and metacognitive approaches that may be broadly applied across various disciplines (e.g. graphic organizers of various kinds can be helpful in sciences, history, and so on). Herber in the 1970's, along with his doctoral students at Syracuse university talked about "functional" content area reading where, in fact, disciplinary literacy practices, along with content area reading strategies would be helpful. I think it's important to note that ongoing debate and discussion in this realm suggests that both dimensions are important (e.g. Dunkerly-Bean & Bean, JLR, 2016; Wilson-Lopez & Bean, ILA policy brief, in press). (Participant 102)
Content literacy is more generic; disciplinary literacy focuses on the needs to communicate with a specific knowledge area. (Participant 103)
Disciplinary literacy and content area reading reflect many of the same instructional attributes. Content area reading/literacy places more emphasis on research-based learning strategies to support reading, writing, thinking, sand learning with text. Disciplinary literacy places more emphasis on encouraging students to approach texts in ways aligned with methods used in academic fields. For example, from a disciplinary literacy perspective, students might engage in real-world tasks that allow them to build background knowledge and develop an understanding of content area concepts. Traditionally, content area reading emphasizes understanding text. Disciplinary literacy extends that to include using text authentically to replicate real-world practices. (Participant 104)
disciplinary literacy is how you think, feel, investigate, and learn as an expert in a subject matter as opposed to content area literacy which is a sub-set of skills related to reading comprehension in math, science, ss, etc. (Participant 105)

Appendix I

First Iteration - Participants' Responses to Research Question 2

This is from a chart that will appear in my new book to be published in August, so it will be copyrighted.

Content-Area Literacy

Focuses on the "what"
Utilizes generic reading/writing strategies as study skills
Shows students strategies for reading and writing across the content areas
Uses strategies to improve test scores
Relies on teachers to make decisions about which strategies to teach when
Scaffolds content-area reading/writing
Sees literacy "across" disciplines, often with little differentiation
Relies on teacher understanding of universal reading/writing skills and associated strategies
Builds reliance on strategies and techniques for studying texts
Incorporates general collaboration activities
Addresses, for the most part, reading and writing

Disciplinary Literacy

Focuses on the "how"
Utilizes teachers' expertise in locating literacy practices appropriate to text and learning goals
Shows students how to use reading and writing as tools to engage in the specific work of the discipline
Uses literacy to build deep, conceptual understandings
Relies on students to become independent in using strategies as needed
Scaffolds content-area participation through reading/writing
Sees literacy as highly discipline-specific and seeks to capitalize on those differences and commonalities
Relies on teacher content expertise and understanding of how specialists in field read, write, think, reason, and do
Builds flexibility in learning which strategies to use when
Incorporates inquiry and collaboration in discipline-specific ways
Addresses a wide variety of literacy skills, including communicating and reasoning
(Participant 106)

Appendix I

First Iteration - Participants' Responses to Research Question 2

Content literacy (CL) is typically defined in the research literature as a generic set of reading comprehension strategies that can be applied to texts across a range of disciplines. It also includes the idea that a content area teacher will be able to show students how to apply these strategies to help them read the content area text(s). Disciplinary literacy (DL) also includes the idea that students should apply generic reading comprehension strategies to a given text. However, DL differs from CL in that DL includes the idea that a text within a particular discipline requires specific approaches and/or methods of reading that text which are unique to that particular discipline. In other words, DL theory suggests that the reading process for historians reading history texts is different than that of scientists reading science texts or mathematicians reading mathematics texts, etc. Fang's investigations of functional language analysis are frequently cited to provide support for discipline-specific reading processes; Fang suggests that there are grammatical and lexical patterns that emerge in the texts of a specific discipline and that these patterns differ between disciplines. Although Fang and others suggest that disciplinary literacy incorporate instruction of these discipline-specific language patterns, I am unaware of any experimental research that demonstrates the efficacy of this approach.

Moreover, DL also incorporates the idea that reading instruction of discipline-specific text be approached from the standpoint of how a disciplinary expert would read that text, i.e. reading history texts like a historian, math texts like a mathematician, etc. However, it is not clear that secondary content area teachers are able to approach texts like disciplinary experts. Unfortunately, many secondary content area teachers possess only an undergraduate degree in their specific content area or a undergraduate secondary education degree with a reduced number of content-specific courses. Yet, titles like "historian", "mathematician", "scientist", "literary theorist", and so forth, are usually associated with those who have earned an advanced/terminal degree in their respective fields, typically a doctorate. Indeed, arguably one of the main goals of graduate programs is to develop in students the ability to not only read, but also (and perhaps more importantly) think like disciplinary experts. Consequently, the idea that secondary content area teachers would be able to demonstrate for their students how to think like disciplinary experts seems a bit misguided. Not to put too fine a point on this, but how many undergraduate elementary education majors would be capable of reviewing articles for Reading Research Quarterly? I would submit that the same would hold true for undergraduates in the content areas and major research journals in mathematics, the sciences, the social sciences, and English. (Participant 107)

Both approaches envision students who grow as literacy learners as they interact with the texts and practices of a discipline. Content area reading has emphasized general literacy strategies and practices that might be useful across disciplines to support reading and learning. Similarities amongst the disciplines are often highlighted. Disciplinary literacy has investigated specific literacy strategies and practices that are particular to the study of an individual discipline. Hence, differences between the disciplines are often examined. Content area reading has as its underpinnings the wealth of research literature on comprehension generated by reading researchers. Disciplinary literacy researchers have zeroed in on the disciplines themselves, the nature of the particular texts of a discipline, and how disciplinary experts use language as they develop and communicate disciplinary knowledge. (Participant 108)

Appendix J

Compare and Contrast Chart – Participants' Responses to Research Question 2

Content Literacy Descriptors	Content Literacy and Disciplinary Literacy Descriptors	Disciplinary Literacy Descriptors
Background development (100)	"Both use cognitive strategies to scaffold instruction" (101)	"Ways of talking and thinking in specific disciplines" (100)
"Imported into the discipline" (101)	Both important (102)	"Constructed from within" (101)
Cognitive and metacognitive approaches applicable to various disciplines (102)	Functional content area reading-Herber (102)	"Communicate with a specific knowledge area" (103)
Generic (103)	Application of generic strategies (107)	"Encourages use of methods aligned with academic fields" (104)
Emphasizes understanding text (104)	Growing "students as literacy learners" (108)	Using text authentically to replicate real world practices (104)
Research based learning strategies (104)		Learn as an expert in the field (105)
"Sub-set of skills related to reading comprehension" (105)		"Has unique approaches/methods to reading text which are unique to that discipline" (107)
Emphasizes the "what" of the discipline (106)		"Grammatical/lexical patterns differ between disciplines" (107)
Focuses on reading and writing (106)		Emphasizes the "how" of the discipline (106)
"Relies on teacher understanding of universal reading/writing skills and associated strategies" (106)		More emphasis on student autonomy in selecting appropriate tools and strategies. (106)
Focus on comprehension in research (108)		Requires teacher expertise and understanding of discipline (106)
General strategies used where disciplines are similar (108)		Focus on nature of the text, use of language, and how communicate discipline knowledge (108)
Emphasizes general literacy strategies/practices useful across disciplines (108)		

First Iteration – Participants' Responses to Research Question 3 and Question 4

What are significant works in the field of disciplinary literacy?	What attributes make these works significant to the field of disciplinary literacy?
There are a lot, but the pieces that perhaps most foundational in starting an interest in inquiry in disciplinary literacy appeared in the Harvard Ed Review spring edition, 2008. Ironically, some of the key foundational pieces that have informed disciplinary literacy are from outside disciplines-- most notably history and written by Sam Wineburg and colleagues. The Stanford History Education Group exerts a lot of influence. I would consider multiple pieces by Cynthia and Tim Shanahan very influential, although I disagree with some of their points. Likewise multiple pieces written by my former student, Elizabeth Moje, per have been very impactful.	The most influential pieces tend to define the field and explicate theoretical frameworks. They are pieces designed to change the way we think about disciplinary literacy, particularly against the backdrop of content literacy and its predecessors. That is it, although she of these pieces are data based, their main appeal is in their foray into new perspective or in their ability to bring together multiple theoretical perspectives.
Shanahan & Shanahan, Harvard Educational Review; Sam Weinburg; Jonathan Osborne; Brozo's work on balancing disciplinary and content area	Clearly defined the concept and provided a rationale for it
Vicki Zygouris-Coe text; Fisher text	practical frameworks for classroom teachers and clarity of presentation
For a pretty comprehensive review and an argument for the value of interdisciplinary literacy to deal with vexing world problems (e.g. climate change), see: Dunkerly-Bean, J., & Bean, T. W. (2016). Missing the savoir for the connaisance: Disciplinary and content area literacy as regimes of truth. Journal of Literacy Research, 48 (4), 448-475. Also see: Wilson-Lopez, A., & Bean, T. W. (in press). Content area and disciplinary literacy: Strategies and frameworks. International Literacy Association, Dec. 18, 2017, Policy brief available at: literacyworldwide.org In the Dunkerly-Bean & Bean JLR article there is a detailed history of content area reading and a review of disciplinary literacy research. We also counter wild claims that "content area reading is dead."	Intellectual rigor, balanced views that do not seek to make warrants and claims without adequate studies and a significant body of work (particularly in disciplinary literacy). As we note in our writing, the research in disciplinary literacy is still relatively new but certainly promising. For example, Moje's systematic approach to disciplinary work in engineering and science provides a heuristic scholars and teachers can adopt (e.g. see Moje's Harvard Education Review article, 2015). That work offers a concrete approach Elizabeth and colleagues (e. g. Bain) have used working with teachers in Detroit public schools.
1.Brozo, W., Moorman, G., Myer, C. K., & Stewart, T. T. (2013). Content-area reading and disciplinary literacy: A case for the radical center.	Works #3-5 are significant because they are frequently cited in the literature addressing DL. Although these works suggest that

Journal of Adolescent & Adult Literacy, 56(5), 353-357. 2. Faggella-Luby, M.N., Graner, P.S., Deschler, D.D., & Drew, S.V. (2012). Building a house on sand: Why disciplinary literacy is not sufficient to replace general strategies for adolescent learners who struggle. Topics in Language Disorders, 32(1), 69–84. doi:10.1097/TLD.0b013e318245618e 3. Fang, Z. (2012). Language correlates of disciplinary literacy. Topics in Language Disorders, 32, 19-34. 4. Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content area literacy. Harvard Educational Review, 78(1), 40–59. 5. Shanahan, T., & Shanahan, C. (2012). What is disciplinary literacy and why does it matter? Topics in Language Disorders, 32(1), 7–18. doi:10.1097/TLD.0b013e318244557a	different approaches are used to read texts in different disciplines, they present little quantifiable evidence to demonstrate which (or even that) textually-specific reading processes are engaged when reading a given text as opposed to another one. Work #1 is important in that it posits that CL and DL are more alike than different and provides suggestions, with examples from classrooms, for how to combine ideas from both instructional approaches to make literacy instruction more effective. Work #2 is important in that it points out that DL approaches to literacy instruction will likely be ineffective for struggling readers, and that they will benefit more from instructional approaches typically associated with CL before they can begin to benefit from DL approaches. This is important to note as the NAEP indicates that approximately 65% of nation's students read below a level deemed proficient.
http://hepg.org/her-home/issues/harvard-educational-review-volume-78-issue-1/herarticle/rethinking-content-area-literacy_640 http://hepg.org/her-home/issues/summer-2015/herarticle/doing-and-teaching-disciplinary-literacy-with-adol Investigating Disciplinary Literacy: A Framework for Collaborative Professional Learning Book by Christina L. Dobbs, Jacy Ippolito, and Megin Charner-Laird Wineburg, Sam. Historical Thinking and Other Unnatural Acts Charting the Future of Teaching the Past	They were among the first to define the concept in ways that were accessible to practitioners and convincing to researchers in the general field of literacy development/adolescent literacy
Fang, Z., & Schleppegrell, M.J. (2010). Disciplinary literacies across content areas: Supporting secondary reading through functional language analysis. Journal of Adolescent & Adult Literacy, 53(7), 587–597. Fang, Z. (2012). Language correlates of disciplinary literacy. Topics in Language Disorders, 32, 19-34. Heller, R., & Greenleaf, C.L. (2007). Literacy instruction in the content areas: Getting to the core of middle and high school improvement. Washington, DC: Alliance for Excellent Education.	My choices of these particular works focus on the impact I perceive that they had on developing an understanding of disciplinary literacy and arguing for re-envisioning how we attend to the literacy development of learners as they grapple with the specific texts of a discipline. Heller and Greenleaf's monograph was a significant and widely circulated call for disciplinary literacy through the ambitious efforts of the highly influential Alliance for Excellent Education. Likewise, the Lee and Spratley monograph

Lee, C.D., & Spratley, A. (2010). Reading in the disciplines: The challenges of adolescent literacy. New York: Carnegie Corporation of New York. Moje, E.B. (2008). Foregrounding the disciplines in secondary literacy teaching and learning: A call for change. Journal of Adolescent & Adult Literacy, 52(2), 96–107. Shanahan, T., & Shanahan, C. (2008). Teaching disciplinary literacy to adolescents: Rethinking content-area literacy. Harvard Educational Review, 78(1), 40–59.	was representative of the important work supporting disciplinary literacy by the Carnegie Corporation of New York. Both of these monographs widely circulated in school districts and were influential for policy makers in a number of states. The Shanahans provided a much admired model for understanding disciplinary literacy, and this much-cited article developed a persuasive case for understanding distinctions between disciplines. Moje has long been a voice in establishing the foundation for disciplinary literacy, and this essay crystallizes her perceptions for disciplinary literacy. The functional language analysis approach that Fang and Schleppegrell explicate offered an in-depth examination of the texts of various disciplines, suggesting how insights into how disciplines develop, organize, and communicate their knowledge and practices factor into interacting with disciplinary texts. Fang's 2012 article is an outstanding expansion of that work.
Herber Vacca Alvermann Bruehl & Moore Moje Shannahan Bruehl	Herber, Vacca, and Alverman, established a foundation for content area reading upon which current work on disciplinary literacy is being developed. The others listed above have produced important, even ground-breaking works in the field of disciplinary literacy. The works appear in important journals in our field, and are widely read and cited.
This is Disciplinary Literacy - Lent; Anything Elizabeth Moje has written on the topic; Investigating Disciplinary literacy: A Framework for collaborative Professional Learning - Dobbs, Ippolito, Charner-Larid; Content Matters: A Disciplinary Approach to Improving Student Learning - Stephanie M. McConachie and Anthony R. Petrosky; Content Area Reading and Disciplinary Literacy: A Case for the Racial Center (article) William G. Brozo, Gary Moorman, Carla Meyer, & Trevor Stewart; Shanahan & Shanahan's work on DL; Roni J. Draper's work on DL.	Moje, the Shanahans, Draper and Brozo come at this from an academic perspective, supporting readers' understandings. Lent and McConachie/Petrosky take a practitioner's stance. All move us toward deeper understanding.

Appendix L

Participants' Responses to Summary Statements for Disciplinary Literacy Definitions

	Disciplinary literacy is the strategic use of cognitive processes required to understand discipline-specific texts.	Disciplinary literacy moves beyond generic metacognitive strategies to utilize the particular approaches needed to be or become literate in a discipline.	Disciplinary literacy moves beyond knowing the "what" of disciplinary knowledge to the "how" and "why" - an understanding of how and why experts in a field of study create, communicate, and share disciplinary knowledge, which enables students to navigate a wide range of disciplinary texts.	Disciplinary literacy is the intersection of the literacy practices, the utilized language forms, and the epistemology of the discipline.	Disciplinary literacy is the use of discipline-specific literacy tools (reading, writing, speaking, listening, and reasoning) used by experts in order to participate in a subject area.
101	That definition is aligned with mostly the content literacy orientation that is based on the research stemming from the cognitive revolution in reading in the 1980s and into the 1990s. Disciplinary literacy includes these cognitive strategies—most of the models of disciplinary literacy have cognitive components—	I agree, but—while disciplinary literacy moves beyond both generic cognitive strategies and metacognitive strategies it is not very clear what being "literate" in a discipline means or what the "particular approaches" are that get you there. This alludes to sort of a general notion of being literate applied to disciplines. It is likely that to be successful in a discipline you need to be tuned into the textual and other discursive constructions, the sociocultural constructions within disciplinary subcultures, etc.	I am convinced after years of studying literacy in one discipline—history—that the how and why are more important to teachers in the discipline—the practitioners within disciplines just assume that they do what they do—read and create texts, engage in discussions and other discursive practices because that is what people do within the discipline. When literacy people questions these disciplinary practices with an outside lens – e.g., what about the practices of "struggling" readers? or how do you know that students are engaging in independent strategies?—the practitioners in the discipline are likely to just focus on how to engage students in inquiry focused on finding evidence to support arguments because that what they do in history.	I am pretty sure I agree with this one but I am seeing an over-extension of the term "epistemology" . I like the idea of viewing disciplinary literacy as a set of practices and language forms if that includes a specific reference to discursive practices.	I agree with this but am not as favorably disposed to it as the previous item in which the terms practice is used. I think tools is a bit more anachronistic and not so easily grounded in sociocultural contexts as practices.
102	Current research in disciplinary literacy would suggest that each discipline has particular ways of	I agree with this statement as ongoing studies show that generic strategies, while helpful (e.g. graphic	I do think this element is best accomplished through a problem based curriculum in various disciplines, as well as an	Each of these elements is important in the context of becoming "an insider" in a discipline. Unfortunately, it's	These are important aspects of functioning successfully in disciplinary areas but there are fields where "performing"

181

Appendix L

Participants' Responses to Summary Statements for Disciplinary Literacy Definitions

#						
103	I appreciate the parts that say strategic and cognitive. I think those are important considerations	addressing content (e.g. sourcing in history). Thus, while cognitive strategies may be helpful for students, they are simply not enough to enter the particular worlds and discourse of each discipline.	organizers may be useful in a number of disciplines) are simply not enough to truly experience what it means to be "literate" in a discipline.	understanding that vexing problems (e.g. climate change) may require teams of various disciplines in interdisciplinary collaboration.	note hard to find resistance to the "literacy" element where a disciplinary expert may well be expecting (despite counter evidence) students to independently read and understand complex text material in chemistry, history, mathematics, and so on. This is particularly problematic at the college level for undergraduates and there is a body of work that shows just how a "sink or swim" approach to advanced level reading penalizes students.	is paramount (e.g. music). Work by Draper and others shows that the content area view encompassing these five elements of learning may miss the mark when we are talking about the arts.
104	Cognitive processes are part it; strategy selection is also important.	It extends beyond, but does negate the value of	This statement relates to how people who work in a discipline approach text in that discipline.	Too long and complicated / This statement emphasizes cognitive processes, deliberate strategy selection, and authentic use of texts.	A little jargony for me / This conveys the same message as the statement before it.	Concise / It would be helpful to expound on what is meant by "participate in a subject area."
105	wearing the hat of a specialist	general content area cues aren't enough		even within a discipline, there is a range of skills needed to navigate complex and diverse texts	I don't think most fields have one epistemology guides content consumption	living the life of one in the field
106	While DL does incorporate the strategic use of cognitive processes, it also refers to the appropriate participation in the disciplines that requires using those processes. Simply "understanding" discipline-specific text is not enough to fully engage in disciplinary literacy instruction.	Again, that statement is part of the definition. In order to "strongly agree," the word "participation" would need to be included.		Yes. The inclusion of the word "create" makes this a valid definition of DL.	This definition appears a bit narrow. I would ask how it differs from traditional content-area study. DL goes beyond the study of the discipline into the deep understanding that results from participating in its creation, evaluation, and problem-solving.	I would add "understanding of" in addition to "use of"

Participants' Responses to Summary Statements for Disciplinary Literacy Definitions

ID					
107	I agree with this statement in that certain disciplines require unique cognitive processes that might not be relied on to the same extent in other disciplines.	I'm not sure I can agree or disagree with this statement because the phrase "generic metacognitive strategies" does not seem to be clearly defined in the context of this questionnaire. Indeed, I believe the field is still waiting for those who argue for the concept of disciplinary literacy to demonstrate which specific "metacognitive strategies" vis-a-vis language-ing processes (literacy) are used differently in, say, science vs. history vs. math.	I agree with this statement if it defines "students" as advanced undergraduate or graduate students in a particular discipline. Otherwise, there is little empirical evidence to support the implied claim in the statement that "an understanding of how and why experts in a field of study create, communicate, and share disciplinary knowledge" actually "enables (K-12) students to navigate a wide range of disciplinary texts."	I could agree with this statement to the extent that "literacy practices" and "utilized language forms" are clearly described and defined in cognitive terms.	Again, I could agree with this statement to the extent that "discipline-specific literacy tools (reading, writing, speaking, listening, and reasoning)" are clearly described and defined in cognitive terms.
108	I agree with the definition but feel that more needs to be said; also "cognitive processes" would not be clear if this definition is used with teachers in particular and the public in general. Distinctions between disciplines do not readily emerge from this definition.	I like this definition for its intent and it is consistent with the scholarship in the field; "generic metacognitive strategies" is "Discourse" that does not communicate well to classroom teachers or the public. I think disciplinary knowledge-building should be somewhat woven into this statement. I like the statement "moves beyond" in its acceptance of content literacy but recognition that while foundational, it is not sufficient.	This definition speaks to possible misinterpretations of disciplinary literacy as merely becoming more knowledgeable in a discipline (what people in a discipline know), which one often encounters in school settings. It places literacy in the center of the processes of studying a discipline and positions disciplinary knowledge-building as the center of disciplinary literacy.	An accurate portrayal, but the "Discourse" of this definition speaks only to a narrow, research-based field, and not to the general education community of practitioners, not to mention the public. I would never use this definition in a professional development with teachers or hand it to a school board.	Fairly strong definition, consistent with the scholarship, although the term "literacy tools" feels somewhat "argonistic" and disciplinary experts do indeed use some general literacy "practices" as well as "disciplinary-specific "variations in their study and communication of a discipline.

Appendix M

Participants' Responses to Content Literacy and Disciplinary Literacy Summary Statements

Participant	Content literacy is a set of skills applied to understand content while disciplinary literacy is a set of skills constructed within the discipline reflecting the discipline's texts, discourses, and epistemology.	Content literacy refers to general literacy strategies used to support the development of background knowledge and content learning. Disciplinary literacy refers to specific literacy strategies and practices of a field of study.	Content literacy emphasizes understanding text. Disciplinary literacy extends content literacy so that texts may be used authentically for real world application.	Both content literacy and disciplinary literacy use cognitive strategies for instruction. Disciplinary literacy processes are created within a discipline and content literacy processes are applied to a discipline.
101	This misses the point with regard to content literacy. Content literacy can be viewed as very similar to disciplinary literacy in that the skills can be applied to the discipline after studying the discipline. The term content is problematic as juxtaposed to the term discipline. There is lots of "epistemological" discussion out there regarding the relations among content, discipline, and subject.	I mostly agree--but. . . one would have to subscribe to some positions among disciplinary literacy scholars that cast content literacy and disciplinary literacy a bit to dichotomously-- e.g., Cyndie and Tim Shanahan. Disciplinary literacy, in addition to focusing on very specific sets of practices developed within the discipline, can also benefit from more "generic" cognitive strategies-- for example, you should be able to monitor your comprehension, generate inferences, synthesize important gist from texts, whether you are reading in history or biology. But arguments in history and biology are very different and the	I do not follow this one, but I disagree on the distinction I think is being made.	Same as my previous response-- these are not clear distinctions. Disciplinary literacy practices are both created within the discipline and also learned from outside of the discipline-- e.g., my example with comprehension monitoring and synthesizing.

		processes and practices in producing them are very different.		
102	This seems like a pretty balanced view that acknowledges both content area literacy (and its older line of research well established), as well as newer disciplinary specific research (e.g. Shanahan and others; David O'Brien's work at U. of Minn.).	Again, this may be too finite and not really encompassing the broad array of fields spanning engineering to the arts. The varying degree to which "literacy" writ large is applied broadly to multiple content areas is, as I noted earlier, a problem. Not to mention all the multimodal elements that encompass curriculum in various fields.	Both are generally viewed as important elements so I am inclined to see them working in concert where appropriate. For example, physical education is more centered on performance than text reading and resistance to text reading is not uncommon in this discipline sub-culture.	I-charts and other visual representations seem to cut across some fields (science, history) but disciplinary literacy is centered on the particularities of portraying meaning in a specific field (e.g. precision in chemistry so as not to blow up the lab)!
103	Good comparison	Okay - but I think it's generic rather than general	I think content literacy is more than understanding texts - writing, speaking, etc.	Reasonable
104	I don't believe, in practice, there is a significant different between the two terms "content literacy" and "disciplinary literacy." This statement captures the differences between the two in theory.	Same statement as above. Disciplinary literacy seeks to link strategies to the ways in which authentic texts are approached within particular disciplines.	Both content literacy and disciplinary literacy relate to understanding authentic texts.	I think that disciplinary literacy processes and content literacy processes can both me applied to a discipline.
105	don't really think of DL as skills constructed within the discipline	same here	i think both have real world applications	not sure
106	If "constructed within the discipline" means participation in that discipline, then I do agree.	Content literacy is used to help students understand the texts of a discipline, often for the purpose of test taking. DL refers to the "use" of content-specific literacy strategies and practices.	DL doesn't "extend" content literacy; rather, it "utilizes" it so texts, discourses, practices, understandings may be used in the practice of the disciplines.	I like the words "created" in defining DL. Both use cognitive strategies, but for different purposes. Are content literacy processes applied-- or also used?
107	I disagree with this statement because it	I could agree with this statement to the	I disagree with this statement for at least	I disagree with this statement because it

doesn't clearly define "content". "Content" usually carries the connotation of the "content" of a particular subject/discipline, and it is not clear how that would be different from or not contain/reflect "the discipline's texts, discourses, and epistemology."	extent that "specific literacy strategies and practices of a field of study" are clearly described and defined in cognitive terms and that the cognitive literacy processes used in the various disciplines are clearly distinguished.	two reasons. The first is that it places an artificial and perhaps indefensible constraint on the definition of "understanding text" (content literacy) in that it assumes that "understanding" is somehow divorced from application. Second, the words "authentically" and "real world" are quite problematic from an academic and epistemological perspective. "Real world" is particularly meaningless!	is not very clear which literacy processes are specific to (i.e. "created within") a particular discipline.
108	Again, a statement that does not communicate well outside the research community, and the term "set of skills" seems problematic; I'm not at all convinced that there is, or was, an identifiable "set of skills" inherent in content literacy, and the term often misused term "skills" sends the wrong message, when we are really talking about cognitive and metacognitive strategies.	Straightforward distinction that emphasizes knowledge-building as a function of literacy learning within a discipline but also recognizes the distinct and disciplinary-specific uses of literacy within the study of a discipline. Key ideas here are "general" and "specific," with no value judgment interspersed on the relative worth of either.	I generally agree although I believe some indication that disciplinary literacy connects to the practices of people who study a discipline should be woven into it. I also have a problem with "real world application" which can be interpreted too widely, seems subjectively, and perhaps even opens arguments about whether disciplinary experts studying specific (perhaps narrow) topics in their fields are doing "real world applications."	This statement does not seem clear and presents a distinction that one does not generally encounter in the literature. The phrase "content literacy processes are applied to a discipline" does not communicate their relationship to disciplinary literacy processes. Are not disciplinary literacy processes also "applied to a discipline"?

Appendix N

Participants' Rationales for Significant Works Ratings and Follow up Commentary

Participant	Rationale for Ratings
101	I am sure that pieces by Moje and Fang et al have grounded more of my thinking that others. They are the most theoretically articulate and the most forward thinking.
102	The works I selected acknowledge the deep roots of research at Syracuse University in content area literacy from the 1970's to the present, as well as recent work in disciplinary literacy, still very much in its infancy.
103	The ones use the most
104	I don't believe there is one "top work" in this field, nor do I believe these can be rank ordered in terms of most or least significant Each of the works cited makes an important contribution to the field of content literacy/disciplinary literacy. No single work captures all of the details and nuances of this field. The significance depends on the purpose of the reader and the intended application of the information contained in each publication.
105	Fisher and Zygouris Coe's texts are most user friendly and applicable to the classroom.
106	I believe Moje has done more than any other researcher to help identify DL and how it differs from content-area literacy. Her emphasis on participating in the disciplines, which includes construction of knowledge and challenging knowledge is essential. Lent's book takes her ideas to practitioners, which is important in making the shift in schools.
107	I chose Brozo et al., 2013, as my first choice because it addresses what seems to have become a false dichotomy between content and disciplinary literacy. I chose Fagella-Luby et al., 2012 as my second choice because it provides some research support for the importance and applicability of generic reading strategy instruction for struggling readers (the majority of readers in k-12 schools). I chose Heller and Greenleaf, 2007, as my third choice because they provide an in-depth review of content area reading practices.
108	I believe the Shanahans are easily number 1; clearly this is the one of the most cited articles in the last decade; their model for disciplinary literacy is widely admired and used; their research from their Carnegie-funded grant was widely influential and was important for the inclusion of disciplinary literacy standards in the Common Core literacy standards (also Next Generation Science standards); Cindy's important work over the years is a critical foundation for this path-finding study. Pretty much every work on disciplinary literacy cites this work. Fang's work (also with Schleppergrell) on functional language analysis underscores how different the disciplines organize and communicate their knowledge. It essentially blows up the "one size fits all" mentality of general literacy development and practices, and is highly instructive for work with classroom teachers; teachers of a discipline can readily see how different, and sometimes distinct, their disciplinary texts are. Fang's work provides a powerful rationale for the argument that disciplinary teachers must take ownership of the development of literacy learners in

	their fields. Lee and Spratley are cited because of the impact their work (emblematic of the high influence of the Carnegie Corporation of New York, which also funded the Heller and Greenleaf Alliance for Excellent Education monograph) in moving the field toward a recognition of disciplinary literacy and its inclusion in the Common Core literacy standards. School-based personnel took notice and professional development initiatives were strongly supported by this work. Unlike the first two choices cited above, this is not a research-based document, but a powerful advocacy document that helped to change thinking and practice in disciplinary classrooms.

Participant	Follow up Commentary
101	This one is one of most cited foundational pieces that bridges content literacy and disciplinary literacy. It is old but still current in it theoretical framing. The authors are very well known to me: O'Brien, D. G., Stewart, R. A., & Moje, E. B. (1995). Why content literacy is difficult to infuse into the secondary school: Complexities of curriculum, pedagogy, and school culture. Reading research quarterly, 442-463.
102	
103	
104	One correction: In Vacca, Vacca, & Mraz, the topic of disciplinary literacy was introduced in the 2011 (10th) edition of the text.
105	
106	
107	
108	

Participant	Follow up Commentary
101	This one is one of most cited foundational pieces that bridges content literacy and disciplinary literacy. It is old but still current in it theoretical framing. The authors are very well known to me: O'Brien, D. G., Stewart, R. A., & Moje, E. B. (1995). Why content literacy is difficult to infuse into the secondary school: Complexities of curriculum, pedagogy, and school culture. Reading research quarterly, 442-463.
102	
103	
104	One correction: In Vacca, Vacca, & Mraz, the topic of disciplinary literacy was introduced in the 2011 (10th) edition of the text.
105	
106	
107	
108	

Appendix O

Inter-rater Directions

After a personal discussion with the inter-rater (independent rater) about the study and

the publications used to develop the categories, a summary of the discussion was sent along with

the documents in Appendix P and Q.

Dear _____,

The *a priori* codes referenced on the table are based on Moje's (2007) Disciplinary

Literacy Theory and Fang's (2012) Approaches to Developing Content Area Literacies. I have

provided a brief summary of each category on the table as a reference. Please place the

numbered statements in the category you feel the definition best aligns.

My study is a Delphi study with three iterations.

- First iteration - questionnaire with four open ended questions

- Second iteration – questionnaire with definition statements for participants to rate using a
  Likert scale and provide a rationale for the rating

- Third iteration – questionnaire with median ratings and summarized rationale statements

Appendix P

Inter-rater Response Documents

Disciplinary Literacy Theory Pedagogy Categories (Moje, 2007)

Cognitive Literacy Processes	Epistemological Processes of the Disciplines	Linguistic Processes of the Disciplines	Disciplinary Literacy as Cultural Navigation	Does not align
Strategies that can be used to understand texts in any discipline.	Less focus on generic cognitive strategies; focus on how members of the discipline community understand text as well as produce texts (oral and written); how those practices are used by educators and students.	The language process of discipline texts (lexical, grammatical, and structure); Based on systemic functional linguistics; Examines academic language	Interdisciplinary; the belief that, when given the space, students contribute to the development of disciplinary knowledge because they understand when to use the disciplinary practices and the reason behind the practices; students are not passive recipients of knowledge; begins with recognizing students' interests, knowledge, and practices	
	1			
2				
	3			
	4			
		5	W	
	6			
		7		
8				
			9	

Approaches to Content Literacy Instruction (Fang, 2012)

Cognitive	Sociocultural	Linguistic	Critical	Does not align with Approaches to Disciplinary Literacy Instruction
The use of cognitive strategies to understand text	Consideration of student's funds of knowledge; encourages the use of out of school literacies	Direct instruction of academic vocabulary, grammar, and structure of a discipline's discourse	Critical analysis of text in relation to social issues	
		1		
		2		
		3		
		4		
		5		
	6			
		7		
8				
			9	

Appendix Q

Corresponding Statements for Inter-rater Documents

1. Oral and written production and comprehension of the language forms and the epistemic commitments honored within different disciplines.
2. The intersection of literacy processes and practices and disciplinary thinking with a focus on the texts and discourses of disciplines that support student learning.
3. Research in this area, while still relatively new, explores the particularities of various disciplines and the literacy practices relevant to those particularities. For example, sourcing in history to evaluate historical accounts requires that historians and students in this discipline consider the source and accuracy of information. Thus, disciplinary literacy moves beyond generic metacognitive strategies (e.g. summarizing) to encompass the particular approaches to being or becoming literate in a discipline.
4. Reading, writing, speaking, and listening specific to various professions or expert areas
5. Disciplinary literacy seeks to provide students with the skills and mind-set to think like the people in who work in their respective content areas (e.g. historians, mathematicians, scientists). This means understanding the shared methods of reading, writing, thinking, and reasoning as they are applied in each academic field.
6. being able to assume the frame of mind or funds of knowledge related to learning as an expert in a topical field
7. Students are able to utilize discipline-specific literacy tools such as reading, writing, thinking, reasoning, and speaking to participate in the work of each subject area, much as experts might.
8. I define disciplinary literacy as the ability to employ those cognitive processes involved in the reading act that are required to comprehend discipline specific text to the extent necessary to accomplish specific goals; in this definition, the term goal can have a variety of connotations, such as pleasure (e.g. reading a spy thriller), studying (e.g. understand the differences between mitosis and meiosis), reviewing an article submitted to a research journal, etc.
9. Disciplinary literacy represents a significant transition from more generalized reading behaviors to highly contextualized reading demands—reading, writing, and thinking through different disciplinary lenses. Students are called on, certainly in the later elementary grades and most definitely during the middle and high school years, to delve into increasingly complex texts that reflect the knowledge, processes, and wisdom—the discourses—of a host of academic disciplines. Hence, disciplinary literacy is not one compact set of highly skilled behaviors and routines but many. Students are expected to grow their capacities to access communications through texts as disparate as literary fiction, mathematics, the sciences, the social sciences, technical fields, health and fitness, art, music, and others. When people think of being literate in a discipline, they tend to focus on being conversant with key information and understandings— facts, concepts, explanations, ideas. Students immersed in disciplinary study are certainly engaged in expanding their content knowledge, the "what" a literate person knows, in biology, in history, in mathematics, and in other subjects. But disciplinary literacy equally involves building disciplinary knowledge, the "how" and "why" of a discipline's approach to knowledge and examination of our world. In essence, learners need to appreciate the inner workings of a discipline—how experts within a discipline create, communicate, and share disciplinary knowledge. Disciplinary literacy instruction is undertaken in the service of acquiring disciplinary knowledge, insights, and practices, so that students expand their abilities to successfully interact with the wide range of disciplinary texts and communicate their understandings through speaking, writing, applying, and creating in ways that conform to disciplinary expectations.

Appendix R

Second Questionnaire Letter to Participants

Dear Participant,

I hope you had a wonderful holiday season and that this email finds you doing well. Thank you for your responses to the first questionnaire. As stated in the participant request and information sheet, there are three phases to this study. The second questionnaire contains a summary of the information provided by this study's participants. For this questionnaire, you will rate information derived from the first questionnaire and provide a rationale for your rating.

The second questionnaire has three sections. Section one presents you with five proposed definitions for disciplinary literacy. Section two presents you with four statements regarding content literacy and disciplinary literacy. For these two sections, you are asked to rate each statement and then provide a rationale for your rating. Section three presents you with a list of proposed significant works in the field of disciplinary literacy. For this section, you are asked to rank your top ten (10) works from the list with one (1) being the most significant and then provide a rationale for your top three (3) choices.

Please use the link below to access the second questionnaire. If you would like to preview the list of proposed significant works prior to starting the questionnaire, there is a link below to that document.

Link to second questionnaire - <Google link provided>

Link to proposed significant works - <Google link provided>

If you would prefer a paper copy of the questionnaire, please email me your preferred mailing address and I will drop it in the mail today.

I would appreciate your responses to the second questionnaire by January 19. If you have any issues with the links or any questions regarding the study, please let me know. I can be reached via email or by phone at 361-510-5424.

Thank you for your continued participation and Happy New Year.

Sincerely,
Kelli Powell

Appendix S

Third Questionnaire Letter to Participants

Dear Participant,

Thank you for your continued participation in my study. This is the third and final iteration.

Within the Google Form (see below), I have provided you with your responses from each section of the previous questionnaire so that you can review them and confirm that they are accurately recorded. If you would like to amend your original submission, you are provided space to do so.

The final questionnaire asks to you consider the median rating and a summary of the participants' rating rationale statements. Please consider the median rating and rationale summary for each statement in Section 1 and Section 2. After reviewing the information, please respond with any additional thoughts or information that you feel needs to be considered in the discussion of disciplinary literacy in the space provided.

If the data reveals additional themes that need clarification, please indicate on the Google Form if you would be willing to participate in a follow up interview.

<Google link provided>

If you have any questions or the links are not functioning correctly, please do not hesitate to contact me at 361-510-5424 or vial email.

Thank you for your participation in my study and most of all for sharing your expertise and time with me.

Sincerely,

Kelli Powell