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Literacy Across Disciplines: An Investigation of Text Used in Content-Specific Classrooms

Pam McDonald
University of Connecticut - Storrs, pam.mcdonald11002@gmail.com

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Pamela McDonald

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Abstract

This pilot study focused on literacy in secondary settings, where classes are content-specific and organized into varying levels. Teacher views on literacy instruction as well as the types of texts used across the disciplines and course levels were explored. The following research questions guided the study: 1) Do early high school teachers view their class' reading tasks as more discipline- or content-focused? 2) Does the complexity of the texts assigned in early high school vary across the various course levels? 3) Does the complexity of the texts assigned in early high school vary across the disciplines? 4) Does the authenticity of the texts assigned in early high school vary across the various course levels? Interviews from a total of 21 ninth and tenth grade teachers were analyzed, as well as sample texts from their classes. Teacher interviews were examined in order to determine their views—either more content-area based or disciplinary based— on literacy instruction within their content-area classrooms. The sample texts' Lexile levels were analyzed across discipline (Language Arts, Math, Science, Spanish, and Social Studies) and course level (A, B, DI) in order to find any relationships that existed between text complexity and discipline or level. Finally, the authenticity of the sample texts—in relation to the course level they were being used in—was explored. Results indicated that most content-specific teachers view their literacy instruction as having a more content-area focused purpose rather than a disciplinary focus. Although no relationship was found between the complexity levels of texts across the course levels, a relationship was found between the complexities of texts in certain disciplines. Lastly, results did not show any significant relationship between the authenticity of a text and its course level.

Chapter I

Introduction

Reading is an essential skill, one that emerges in the early elementary grades and remains crucial throughout adulthood. Consequently, it is imperative that students learn to read competently, or appropriately for their age group, during the early elementary grades and do not fall behind. Unfortunately, many students have reading disabilities and difficulties that prevent them from achieving reading proficiency. More than one-third of students in the United States, when they reach the fourth grade, read at levels so low that it jeopardizes their education and prevents them from completing their schoolwork successfully (Lee, Grigg, & Donahue, as cited in National Early Literacy Panel, 2008). Furthermore, national literacy assessments reveal that success in literacy continues to be a problem as students progress to higher grades and even become adults (NAEP & NCES; Campbell, Hombo, & Mazzeo; Kirsch, Jungeblut, Jenkins, & Kolstad, as cited in National Early Literacy Panel, 2008).

When students do not successfully learn the skills needed to read proficiently, it is easy for them to fall behind and stay behind. Because most school activities and overall knowledge acquisition are based around the ability to read and comprehend text, students are susceptible to failing to achieve in all areas of schooling (e.g., Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, 1996; Good, Simmons, & Smith, 1998; Juel, 1988; Torgesen & Burgess, 1998). As a result, finding effective instructional methods and intervention strategies for students with reading difficulties is very important.

Although explicit reading instruction is associated with the elementary grades, reading continues to be an instrumental part of all instruction, even in the later grades. In order to learn

more about literacy instruction and its role in the later, content-specific classes, we conducted a pilot study. In the study, we explored four questions related to literacy instruction:

1. Do early high school teachers view their class' reading tasks as more discipline- or content-focused?
2. Does the complexity of the texts assigned in early high school vary across the various course levels?
3. Does the complexity of the texts assigned in early high school vary across the disciplines?
4. Does the authenticity of the texts assigned in early high school vary across the various course levels?

In order to answer the first research question, we used the interviews of 21 high school teachers who teach a variety of differing subjects. The questions were designed to yield answers regarding their views on reading within their class or classes. Since high school classes focus on one specific subject area, and reading is such a pervasive and essential part of school throughout all grade levels, we were interested in teachers' views on the purpose of the reading assignments they give their students.

Reading instruction and the explicit teaching of reading strategies are typically associated with the elementary grades, when students first begin learning how to read. However, reading continues to be an important part of school as it is the primary way students acquire information and learn about varying topics. Teachers of high school, content-specific classes use a variety of reading materials (textbooks; newspaper, magazine, and online articles; teacher-created worksheets and notes; PowerPoint slides; etc.) to teach their students about their specific content areas. The use of reading materials for this purpose—one that aims at students learning the

subject's content, separate from learning certain reading skills—reflects a content-focused view of reading instruction, also known as content-area literacy instruction. When teachers prioritize a deeper instruction of *how* to read certain texts (or the strategies involved) in order to gain content knowledge as well as enhance reading skills, they hold a more disciplinary view of literacy instruction within their content area. Unlike content-area literacy instruction, disciplinary literacy instruction emphasizes both the content of texts as well as the strategies and skills needed to fully comprehend them at the same time.

Research in response to the second question aims at discovering the relationship between the texts used in different levels within the ninth and the tenth grade and their relative complexities. When considering the disciplinary literacy view, one that sees varying text types as needing different skills and strategies to be read comprehensively, it is of great interest to us whether or not the level of the course that teachers teach makes a difference in the complexities of the texts they choose. To answer this question and to establish whether or not the difference in complexities across disciplines was significant, the Lexile levels of the sample texts across the different levels found in each course were compared.

Similarly to question two, research and data analysis to answer question three involved comparing the text complexities across the different disciplines. The content areas of Language Arts, Social Studies, Science, Math, and Spanish were looked at for this study. Like for research question two, the sample texts' Lexile levels were used when comparing the text complexities and determining whether or not the difference in complexities was significant.

Furthermore, research question four addresses text authenticity, a term used to describe how related a text is to the particular discipline and the professionals who practice within the discipline. Specifically, does the authenticity—or reflectivity—of the type of text in relation to

the class level (within ninth and tenth grade) relate to the text's complexity? Are more authentic texts, since they are generally more engaging, also more complex and difficult to read? In order to find the authenticity of each text sample, a scale on the authenticity of the different texts was created. After the authenticity of each text was determined, they were grouped by course level and compared. In this way, the sample texts' authenticity levels were compared to determine if there was a significant difference in text authenticity across course levels.

Our data came from a high school in Connecticut, specifically from the "day in the life" of eight different students—four freshmen and four sophomores at varying academic levels. The texts that we analyzed came from these students' daily schedules and ranged in subjects from English to agriculture.

Chapter II

Review of Literature

In this review, several negative implications of reading difficulties will be explored, as well as the cumulative effect that these implications have on students when unaddressed. Next, several theorized causes of reading disabilities will be discussed. Prior research on early intervention will also be examined to demonstrate evidence of effective intervention characteristics. Lastly, a comparison of disciplinary literacy instruction and content-area literacy instruction when students enter content-specific classes in the later grades, along with the reading load and level of texts that are utilized in these classes, is discussed in relation to the effectiveness of each instruction type.

Learning to Read: The Simple View

The reading process is both complex and very involved. For an individual to read successfully, a variety of independent brain processes need to occur correctly at the correct times and, furthermore, these processes need to work together for the individual to achieve comprehension. At the most basic level, readers must accurately identify written words and their individual components of sound, otherwise known as phonemes (Denton & Al Otaiba, 2011). This phonemic awareness is important to the reading process because the understanding of letters and letter groupings, as well as the resulting spoken sounds, enable readers to sound out letters and apply these constant sounds to other words with the same letters or letter combinations. The ability to recognize words or parts of words "on sight" is also necessary. The recognition of different letters and letter combinations enables readers to mentally visualize the words they are reading. As readers are able to recognize more words at a more rapid pace, their fluency increases (Denton & Al Otaiba, 2011).

Whereas phonological awareness and on-sight recognition of words underlie the "decoding" aspect of the reading process, a variety of other processes embody the "comprehensive" aspect (Gustafson, Samuelsson, Johansson, & Wallmann, 2013). Phonologically, the individual letters and words of a sentence must be matched to previously stored mental representations and linguistic segments must be differentiated and interpreted. Semantically, the sequence of the different words within a sentence must be acknowledged and interpreted. In order to achieve grammatical understanding, individuals must be able to understand the relationship of the different words within a sentence. Furthermore, the connection of prior knowledge to the new and interpreted knowledge from the text being read is necessary in order for individuals to comprehend text pragmatically (Gustafson et al., 2013).

Reading Disabilities

Although the exact causes are unknown, research and various theories provide a foundation for why reading disabilities occur. From a cognitive perspective, reading difficulties are the result of faulty mental processes. Both lower level processes, such as those that convert the text into something meaningful, and higher level processes, ones that combine the meanings together to form an accurate mental representation, work together in order to produce reading comprehension. Therefore, reading difficulties surface when one or more of these processes are working incorrectly or inefficiently (Kendeou, van den Broek, Helder, & Karlsson, 2014). Reading comprehension also relies heavily on processes working in the right combination and at the right times. The cognitive view, therefore, suggests that difficulties with comprehending text can result from any irregularity in the timing or the order of these important mental processes.

Research has investigated reading difficulties from a neurological perspective as well. Using functional magnetic resonance imaging (fMRI) or magnetoencephalography (MEG)

techniques, researchers have identified the brain regions involved in the reading process. With the use of phonological, visual scanning, and visual word form manipulations and a subsequent fMRI functional magnetic resonance imaging scan of the participant's brains, researchers have determined the parts of the brain used during the various reading processes (e.g. Heim, von Overheidt, Tholen, Grande, & Amunts, 2014; Shaywitz, Shaywitz, Fulbright, Skudlarski, Mencl, Constable, et al., 2003; Simos, Fletcher, Sarkari, Billingsley, Francis, Castillo, & Papanicolaou, 2005; Simos, Fletcher, Sarkari, Billingsley-Marshall, Denton, & Papanicolaou, 2007). In particular, research findings have indicated that the occipitotemporal region of the brain is crucial in visual word formation and the parietotemporal region of the brain functions in recognizing phonologically based words (Eden & Zeffiro, 1998; Heim et al., 2014; Shaywitz et al., 2003; Simos et al., 2005). Interestingly, however, the level of activation of the parietotemporal region of the left hemisphere did not significantly increase when manipulating word phonology through the use of real or fake words, even though this part of the brain has been found to play an important role in the recognition of spoken words. (Simos, 2007).

A variety of research also outlines the importance of the posterior middle temporal gyrus and the left inferior frontal gyrus. Along with the occipitotemporal region, the middle temporal gyrus is demonstrated as being important for the visual processing of text. Furthermore, the left inferior frontal gyrus, like the parietotemporal region, is found to be involved in the phonological processing of words (Eden & Zeffiro, 1998; Heim et al., 2014; Simos et al., 2007).

Simos et al. (2005) compared at-risk kindergarteners and kindergarteners proficient at reading and found that those who were at risk showed more brain activity in their occipitotemporal regions of the right hemisphere than in the left hemisphere when reading. This was in direct contrast with the kindergarteners who were proficient at reading, as well as

previously studied adults (Breier, Simos, Zouridakis, & Papanicolaou, 1998, 1999; Simos et al., 2001), thereby suggesting increased brain activity in the left hemisphere as reading proficiency increases (Simos et al., 2005).

This research indicates that the mental processes that need to work correctly and in the correct order for reading need to be exercised often in order to strengthen processing when reading. When young readers have difficulty decoding text, they are often less motivated to read and expose themselves to reading less than more proficient readers. This can create a larger gap between proficient and less than proficient young readers' abilities (Simos et al., 2005). Systematic instruction and continued practice, therefore, are necessary for students of all proficiencies in order for them to develop the more complex reading skills that are needed in the later grades.

Early Intervention

In the United States, formal reading instruction most often begins in kindergarten. For students to be successful readers, it is imperative that they learn the skills required to read proficiently starting at a young age. Consequently, effective reading instruction is important in the earlier grades so that students do not fall behind in their reading ability. Research demonstrates that as poor readers in the younger grades get older, it is very unlikely that they will improve in the later grades (e.g., Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, 1996; Juel, 1988; Torgesen & Burgess, 1998). If students do not acquire the skills needed to decode text when they are first learning to read, they will not be able to advance their reading abilities as they continue into the higher grades. Due to this, the inability to decode text is compounded by the inability to utilize other necessary reading skills such as comprehension. Therefore, it is

crucial that students attain reading proficiency in their earlier schooling years so they can have the opportunity to excel in future school years.

When students fall into the low developmental reading trajectory and read at a below average level for their age, the likelihood of future improvement to a level of those in the average trajectory is almost impossible (e.g., Francis et al., 1996; Good, Simmons, & Smith, 1998; Juel, 1988; Torgesen & Burgess, 1998). To achieve the same reading rate as those on the normal reading trajectory, or "catch up," students in the low trajectory would have to acquire their reading skills twice as fast as the average student (Good, Simmons, & Smith, 1998). Considering these students already experience difficulty with reading acquisition, it is almost impossible for them to reach a level of achievement that is equivalent to students without reading difficulties (1998). In order to greatly increase the effectiveness of reading intervention, therefore, it is important that it be implemented early in a student's education.

One component of early intervention is the early identification of reading difficulties in students. A variety of assessments are used to identify students with reading difficulties, including Dynamic Indicators of Basic Early Literacy Skills (DIBELS) and Curriculum-Embedded Mastery Checks. DIBELS measure phonemic awareness and letter sound fluency in kindergarteners, both of which are good indicators of future reading achievement. Curriculum-Embedded Mastery Checks measure short-term and specifically taught skills that are covered throughout the school year, such as the different components of reading. Research has found both assessments to be good predictive measures of kindergarteners' future reading proficiency (Oslund et al., 2012).

The General Education Classroom (Tier 1)

General Education. The early elementary years are pivotal for students in learning how to read. In the United States, formal reading instruction begins in kindergarten as part of general education instruction (e.g., Wanzek, Roberts, Al Otaiba, & Kent, 2014). This instruction, including phonological awareness, reading print, vocabulary, and text comprehension, is essential for later success with reading comprehension (National Early Literacy Panel, 2008). Many students, however, enter kindergarten with deficits in these areas and many more fall behind as their peers progress with learning how to read. Although they have not started school, their environments differ in how much reading practice is available and so many students enter school without the same level of preparedness or exposure to text. As a result, these students face difficulties reading and experience many academic challenges.

In regular, Tier 1 instruction classrooms, students are provided with instruction to promote phonological awareness, oral language and vocabulary, listening comprehension, and print reading competency. Due to Common Core standards as well as other state imposed standards, there are many print-related standards starting in kindergarten, at the time when students are formally taught how to read for the first time. Some of these standards include learning how to decode words, read fluently, interpret the main parts or structures of a text, compare and contrast different texts, and make predictions (National Governors Association Center for Best Practices & Council of Chief State Schools Officers, 2010).

Universal Screening. Universal Screening, or the screening of all students, occurs within Tier 1 instruction. The teachers and researchers who use this process assess all children to identify who has reading difficulties, and to what degree of severity. Two essential components of this process are efficiency and validity. For screening to be efficient, the assessment method

must be quick and easy to maximize instructional time and minimize assessment time. For screening to hold high validity, the assessment must measure the appropriate variables and have high classification accuracy (Speece et al., 2011).

Classification accuracy is high when there are minimal errors, including false negative errors and false positive errors. A false negative occurs when the assessment fails to identify a student who has a reading difficulty. Conversely, a false positive incorrectly identifies a student as having a reading difficulty when one does not exist (Speece et al., 2011).

Progress Monitoring. Progress monitoring is a Tier 1 process used by teachers and researchers that monitors students' reading growth and identifies students who do not demonstrate growth at the expected rate (Speece et al., 2011). Two tools that are used for progress monitoring are the DIBELS and the Curriculum-Embedded Mastery Checks.

DIBELS Fluency-Based Progress Measures. DIBELS, or Dynamic Indicators of Basic Early Literacy Skills, are used to measure early reading development. The Phoneme Segmentation Fluency (PSF) and Nonsense Word Fluency (NWF) are subtests that are particularly important for monitoring the reading progress of kindergarteners. The PSF measures phonemic awareness in students, or how well different phonemes are heard and recognized when words are presented orally. The NWF measures how well students produce individual sounds correctly from words presented visually (Oslund et al., 2012). Both components of the DIBELS are valid predictors of reading outcomes in children (Oslund et al., 2012).

Curriculum-Embedded Mastery Checks. Unlike the DIBELS, Curriculum-Embedded Mastery Checks measure the mastery of specific and short-term skills. They are administered throughout the school year at different points in the curriculum when the students are expected to have mastered one skill set, such as phonemic skills or decoding skills. From the results of this

assessment, the teacher is guided in what to focus subsequent instruction on. Whereas the DIBELS give teachers a general overview of which areas specific students need more help in, Curriculum-Embedded Mastery Checks pinpoint more specific areas that students are struggling with within those broader categories. As a result, Curriculum-Embedded Mastery Checks are an effective way to assess students' individual reading achievement and are best used to guide day-by-day instruction in the classroom. (Oslund et al., 2012) Like the DIBELS, Curriculum-Embedded Mastery Checks are high in the predictive validity of student reading proficiency (Oslund et al., 2012).

Reading Intervention (Tier 2)

When Tier 1 instruction does not result in students' achievement of age-related expectations for reading, the students receive Tier 2 instruction, or intervention. Unlike Tier 1, Tier 2 teachers may be working with small groups of around three to five students. In addition to the instruction received at the Tier 1 level, these students receive supplemental instruction that enhances what they are taught at the most basic level (e.g., Al Otaiba et al., 2014; Griffiths & Stuart, 2013).

Content. The second tier of intervention contains much of the same content as Tier 1 intervention. However, students with reading difficulties are given the extra support they need in Tier 2 to gain reading proficiency. Researchers have found that phonological awareness is among the most important skills to focus interventions on, as it is a good predictor of future reading proficiency (e.g. Good, Simmons, & Smith, 1998; Griffiths & Stuart, 2013; Juel, 1988; Wanzek & Vaughn, 2007). Researchers have found that the implementation of phonics instruction within the broader literacy curriculum, including text reading and writing, result in the most gains in word-level reading (Denton & Al Otaiba, 2011; Wanzek & Vaughn, 2007). Research has further

demonstrated that it is important for students to have phonological and phonemic awareness before they enter the second grade (Griffiths & Stuart, 2013; Juel, 1988).

Evidence suggests that explicit instruction is another component of Tier 2 instruction that results in high reading skill gains in students. Explicit instruction includes the direct instruction of all components of reading, teacher modeling, guided and independent practice, and corrective feedback so that students do not learn the wrong information (Denton & Al Otaiba, 2011; Good, Simmons, & Smith, 1998; Griffiths & Stuart, 2013). Teaching one or two components at a time is also important for effective reading instruction for students with reading difficulties. Furthermore, it is important for students to learn and focus on phonemic awareness, phonics, text reading, vocabulary, and comprehension strategies (National Reading Panel, as cited in Griffiths & Stuart, 2013).

Group Size. The group size for Tier 2 reading interventions varies according to different students' needs. However, research has indicated that a small group size for Tier 2 intervention is generally the most effective (Denton, 2012; Juel, 1988; Wanzek & Vaughn, 2007). Wanzek and Vaughn have found through their review of prior research that one-on-one instruction is actually just as effective as small group interventions with two to four students per instructor.

Duration. Only a few researchers have investigated the ideal and most effective duration for Tier 2 interventions. Griffiths and Stuart (2013) indicated that interventions lasting 10 to 20 weeks are the most effective for Tier 2 instruction. The National Reading Panel (2000) review of research found that Tier 2 intervention lasting longer than 12 weeks begins to demonstrate a decrease in gains in reading skills.

Length. Few studies have examined what length would be the most effective for individual intervention sessions within Tier 2 instruction. The National Reading Panel (2000)

suggested from prior research that sessions should not last longer than 30 minutes. Review of prior research further indicates that the typical Tier 2 session is 20 to 50 minutes per day (Griffiths & Stuart, 2013).

Overall, more research is needed on Tier 2 interventions in order to understand the most effective strategies, or ones that result in the most progress in students with reading difficulties.

Tier 3 Intervention

Content. When students with reading difficulties are not at an appropriate reading level for their age, and Tier 1 and Tier 2 interventions are not getting them to this level, they receive Tier 3 intervention. This intervention focuses on the same content as Tier 2, but the amount of instruction dedicated on certain literacy skills varies depending on the students' individual needs. Often, the students who need Tier 3 intervention are those who need a large amount of assistance with their phonological processing, processing speed, or verbal working memory, and further may have a behavior or attention deficit (Al Otaiba & Fuchs, 2002; Fletcher et al., 2011; Nelson, Benner, & Gonzalez, 2003, as cited in Denton, 2012).

Group Size. Research indicates that one on one instruction is most effective for students receiving Tier 3 instruction (Wanzek & Vaughn, 2007; Vaughn et al., 2003; Elbaum et al, 2000, as cited in Denton, 2012). However, it may be more beneficial to determine the group size based on the students' individual needs (Denton, 2012).

Duration. Wanzek and Vaughn (2007), in their review of research, determined that intervention of 20 weeks or more was beneficial to students and was also possible within the school year. As mentioned by researchers in Denton's (2012) review of research, a variety of other studies have looked at the influence of intervention duration on student reading progress.

However, more research is needed on the various properties of Tier 3 intervention to determine which intervention methods result in the highest literary gains in students with reading difficulties.

Reading in the Later Grades

As students enter the later grades in education, the emphasis of instruction shifts from teaching core academic skills and practices to teaching content-area knowledge that is more specific to a particular subject. As a result, reading and writing assignments focus on the students' use of basic literacy skills to acquire the content-specific information. Many scholars are concerned that there is too much weight being placed on content-area literacy and generic reading strategies within content areas over the instruction of content-specific, disciplinary literacy (Gomez & Gomez, 2007; Brozo, Moorman, Meyer, & Stewart, 2013; Heller & Greenleaf, 2007). This is evident through the large number of secondary students who demonstrate below grade-level reading abilities (Hawkins, Hale, Sheeley, & Ling, 2011; Heller & Greenleaf, 2007; Hurst & Pearman, 2013; National Center for Education Statistics, 2015; Solis, Miciak, Vaughn, & Fletcher, 2014).

A strong and singular emphasis on generic reading strategies may lead students to believe that all academic texts are the same and that they should all be read using the same strategies (Heller & Greenleaf, 2007). This, however, is not sufficient and different reading strategies are necessary to proficiently comprehend varying types of text across different disciplines.

Reading Deficits: An area of concern, therefore, and what makes the investigation of literacy instruction in the later grades so important, is the undeniable evidence that students in the middle school and high school grades are not reaching grade-level proficiency (Alvermann & Rush, 2004; Biancarosa & Snow, 2010; Heller & Greenleaf, 2007; Houge, Geier, & Peyton,

2008, all as cited in Hurst & Pearman, 2013). These reading deficits are grounded in the fact that general literacy instruction in schools stops at the end of elementary school, and in the later grades, when classes are focused on specific content areas, learning to read is not continued while the sole emphasis is on reading to learn. This failure to continue providing students with the unique skills needed to read and, furthermore, comprehend varying texts with differing complexities and purposes, prevents them from continuing to develop as a reader. As a result, as students continue on in their education, they become less and less proficient (Alvermann, 2002; Heller & Greenleaf, 2007).

Content-Area Literacy. Content-area literacy is based on the assumption that the literacy instruction involved in content-area classes is mainly independent from the discipline. This type of literacy instruction focuses on the use of generic literacy skills no matter the content area. As a result, the same literary strategies are used across varying text types and text purposes. Instead of an emphasis on the specific, unique skills needed to proficiently read the different types of texts used in different disciplines, content-area literacy continues implementing basic strategies that are learned in the younger grades (Heller & Greenleaf, 2007; Shanahan & Shanahan, 2008).

Researchers have found that reading skills at the secondary level—in the United States—have remained stagnant since the 1970s, and more than two thirds of eighth and twelfth graders are reading at levels that are below proficient (American College Testing, 2006; National Assessment of Educational Progress, as cited in Heller & Greenleaf, 2007; Kamil, 2003). This information indicates that overall, content-area literacy instruction is not improving secondary students' literacy and, furthermore, may even be resulting in the misinformed idea that all literacy, no matter the content, should be approached in the same way.

Disciplinary Literacy. This literacy instruction differs greatly from the simpler nature of content-area literacy. Disciplinary literacy emphasizes the need for differing reading strategies based on the varying types, purposes, and complexities of texts from discipline to discipline (Alvermann, 2002; Greenleaf, Schoenbach, Cziko, & Mueller, 2001; Heller & Greenleaf, 2007; Torgesen, et al., 2007).

Directions for Further Research

Reading deficits are a common issue within the realm of education. When students fail to acquire the reading strategies and skills necessary to do well in school, they are almost guaranteed to fall behind in their overall academic performance. This deficit has a cumulative effect, and limits students' future educational and professional opportunities. The prominence of reading deficits in today's society has incited comprehensive research on the subject, including the exploration of the mechanisms that cause reading deficits and the methods that could be used to remediate them. However, although much research has been done, much more is needed to develop effective instruction and interventions for students who are at risk of, or already have, reading deficits, especially as they enter the later grades. As classes become oriented towards a specific content area, the emphasis on literacy instruction fades. The type of literacy instruction, as well as the varying complexities and purposes of disciplinary texts, need to be explored more thoroughly to determine the method that result in the most reading skill gains for students as they continue their education in the later grades.

Chapter III

Methods

This pilot study aimed to address the following four research questions:

1. Do early high school teachers view their class' reading tasks as more discipline- or content-focused?
2. Does the complexity of the texts assigned in early high school vary across the various course levels?
3. Does the complexity of the texts assigned in early high school vary across the disciplines?
4. Does the authenticity of the texts assigned in early high school vary across the various course levels?

Qualitative data was acquired for the first research question using a Semi-Structured Interview Protocol. This protocol was used for all participants and focused on their views of reading and writing assignments in their classes. The data collected focused on the teacher's past two weeks of instruction. Although the data collected includes teacher views on writing, only the portion focused on reading was analyzed and used to answer the study's research questions. All qualitative data were examined for patterns, and interview responses that bore commonalities were coded into quantitative representations. Changing these responses into discrete numbers allowed for a more reliable and thorough analysis and comparison of the qualitative data collected.

The relative complexity of the different text samples collected was found using a Lexile analyzer and readability calculators. Since the Lexile measure is most commonly used by school systems when leveling in-school texts, this was examined for the purpose of

answering research question two. In order to find the differences between overall text complexities across the different course levels, the texts were grouped by level. These Lexile levels were examined and compared in order to answer the second research question.

Research question three examined the sample texts' complexities as well and also utilized their Lexile levels. The Lexile levels were compared across content areas in order to determine whether or not a significant difference existed between the complexities of texts in different disciplines.

The fourth research question focused on the differences in text authenticity across the different class levels within ninth and tenth grade student schedules. A total of eight sample student schedules were closely looked at and used to investigate content-area classes with varying levels within the ninth and tenth grade. Text samples were taken from these classes and analyzed to find their authenticity. A scale of one to three was utilized in finding the texts' authenticities.

Participants

The individuals who participated in this pilot study were ninth and tenth grade teachers from a high school in Connecticut. All teacher participants are English-speaking adults over 22 years old, and they represent a mix of genders, ages, income levels and ethnicities. Each teacher has a minimum of a master's degree in education or a related field. Participants were selected based off of eight sample student schedules from the high school, all students of varying academic levels (*Appendix A*). A total of 21 teachers participated in the study. Many teacher participants were included in multiple student schedules and taught multiple classes. Due to the absence of a few teachers' text samples,

we used the interviews and text samples of teachers who taught the same class at the same level as a substitute.

Teachers were sent the same e-mail inquiring about their participation in the pilot study. They responded to an online survey, either indicating their willingness or unwillingness to participate. If there was a willingness to participate, the teachers were asked to fill in times that would work for them to meet with a researcher. They were told that, during this time, they would be briefly interviewed and samples of their class' (or classes') texts or reading and writing assignments would be collected. If we did not get a response from teachers within a week, a follow-up e-mail was sent. Those who participated all consented to participating in this study when they filled out the online survey.

Instruments

A Semi-Structured Interview Protocol (*Appendix B*) was designed and used to collect data on teachers' beliefs concerning literacy instruction within their content-specific classes. Teachers were asked about the prior two weeks of instruction and were asked to supply samples of the texts students used, as well as the reading and writing assignments given. The research questions being focused on in this paper only required an analysis of the overall content and reading portion of the interview. The Interview Protocol contains two content-based questions, six reading-based questions (two of which include sub questions), and seven writing-based questions (two of which include sub questions). Lastly on the Interview Protocol, teacher participants were asked whether or not they taught multiple courses taken from the eight sample student schedules.

The complexities of sample texts were found using a variety of measures. Firstly, the texts were converted into plain text documents. These documents were uploaded into an

online Lexile analyzer, which gave the texts' Lexile levels and mean sentence lengths. The Lexile levels can range from below zero (or Beginning Reader [BR]) to 2000L, with this being the highest possible measure. The lower the Lexile score, the easier the text is to read. The score is found through an analysis of the mean sentence length as well as the text's vocabulary. This analyzer does not examine the complexity of text theme or quality, etc. These scores were analyzed through the website Lexile.com, a site created by the company MetaMetrics (a company dedicated to using technology and scientific measures to help students as well as teachers improve academic achievement and instruction).

To measure the authenticity of each sample text, in order to answer research question four, a scale was created. This scale ranges from one to three: a measure of one means that the text is authentic, or professionals within the particular discipline may use this kind of a text; a measure of two means that the text is specific to the discipline in content (e.g. a textbook); and a measure of three means that the text is nonspecific and would only be used for the purpose of teaching the discipline within a school (e.g. teacher created notes or worksheets). These key words and phrases on the different literacies were generated using a combination of the knowledge we gained about content-area and disciplinary literacies as well as from multiple scholarly resources (Fang & Coatoam, 2013; Lee & Sprately, 2010; Shanahan & Shanahan, 2016). The authenticity levels of the sample texts were grouped together by discipline and then analyzed using an ANOVA.

Procedures and Data Analysis

The participants were given a detailed description of the pilot study via e-mail. They were asked to complete a brief survey, if they agreed to participate, indicating the times that would work best for them to be interviewed. Interviews ranged from ten minutes to

thirty minutes, depending on the responses of the teachers. During the interviews, sample text assignments from the prior two weeks of instruction were either collected as a hard copy or a picture was taken of the text assignments.

Once all interviews were completed, and all texts collected, the text samples (ranging in length from 300-600 words, depending on the length of the sample) were typed into Microsoft Word and converted into Plain Text. Once in Plain Text, the documents were analyzed using an online Lexile Analyzer. The texts that received a higher Lexile level rating demonstrated more complexity than those texts with lower scores. The Spanish text samples (from the Spanish courses) were analyzed using the same online analyzer, only these samples were written in the Spanish language and thus the analyzer analyzed the text in relation to the proper language. This data was analyzed by using an Analysis of Variance (ANOVA). First, the complexities were compared across course levels. The highest course levels were categorized as "A" courses, the middle-level courses as "B" courses, and the lowest courses were denoted by "DI." Sample text complexities were also compared across disciplines. The disciplines focused on in this study were Language Arts, Math, Social Studies, Science, and Spanish.

Interview data was coded and the frequency of these codes were analyzed. Patterns in teacher responses concerning their text assignments and the purpose of these assignments were specifically looked for. Extracts regarding the teachers' text assignments and views on reading in their classrooms were taken from teacher interviews. Key words reflecting either a disciplinary view or content-area view of literacy were taken from the extracts upon the first layer of analysis. After a second and final layer of analysis, these previously found words and phrases were put into refined categories. The frequency with

which these key words or phrases appeared in each interview extract was found. The ratio of disciplinary literacy words and phrases to the words and phrases related to content-area literacy was found for each of the 21 teachers. The teachers' relative view on literacy instruction, and whether it reflected more of a disciplinary or content-area view, was found through these ratios.

Limitations

One limitation of this study is the small sample size. Since this is a pilot study, there were only a limited number of participants. Furthermore, all of the participants were teachers from the same high school. Consequently, all of the participants teach in the same town and work under the same staff, limiting the diversity of participants.

Another limitation is the nature in which the interview data was analyzed. Since the interviews were given using a semi-structured protocol, the teacher responses were open-ended and each answer contained a variety of different words, phrases, and ideas. In order to analyze this data to answer the research question regarding teacher views of literacy instruction within the content-areas, it was necessary to extract common themes from the interview responses. Consequently, this analyzed data is based off of observed similarities in responses and linking overarching themes.

The method with which the text complexities were measured also presented another limitation since there are so few tools available for rating text complexity. The Lexile analyzer, the instrument used to determine text complexity, is designed to analyze texts that are more narrative in style. As a result, the complexity and relative difficulty of certain texts may have been over- or under-estimated.

Furthermore, there were some classes from the student schedules (e.g. Math DI) that had texts that could not be analyzed by the Lexile analyzer. Texts from these classes were not written in a traditional format with structured sentences and comprehensive sections of text. These texts included worksheets filled with numeric math problems as well as sheet music. As a result, the Lexile level of texts were not found and therefore these particular texts are not being analyzed in this study.

The study also spanned a shorter amount of time (teachers were asked about their assignments during the prior two weeks of school) due to its pilot status, thus limiting the text samples collected and influencing interview responses. As a result, only a small sample of texts from a small portion of the school year were collected and analyzed.

Chapter IV

Results

Research Question 1

Do early high school teachers view their class' reading tasks as more discipline- or content-focused?

Interview excerpts that focused on the teachers' views of reading within their class, or classes, were extracted from the teacher interview responses. These excerpts included information revealing the teachers' ideas regarding the purposes for reading within their content-area classrooms. Key, frequently appearing words and phrases were pulled from the extracts and categorized as either reflecting more of a content-area literacy view or disciplinary view. The frequency of these key words and phrases were found for each teacher's interview extract. To find each teacher's overall view on literacy, within their content-area classroom, a ratio was found between the frequency of content-area and disciplinary words.

Overall, the data revealed that six of the 21 teachers interviewed have a more disciplinary view of reading within their content-area classrooms. Fourteen of the 21 teachers demonstrated a view on reading that reflected content-area literacy principles. One of the teachers did not have a skewed view on literacy and, instead, revealed—through the analysis of their interview responses—an unbiased literacy view that did not reflect one view over the other. The data collected from the teacher interviews, as well as the specific ratios found, can be found in *Appendix C*. Furthermore, the interview extracts used to collect the data on teachers' literacy views can be found in *Appendix D*.

Research Question 2

Does the complexity of the texts assigned in early high school vary across the various course levels?

The Lexile levels of the sample texts were grouped by course level (A, B, or DI). Higher Lexile levels indicate a more complex text. A single-factor ANOVA was conducted to determine the statistical significance of the variance of text complexities across the disciplines. There were 19 sample texts within each of the A and B leveled courses, and 8 sample texts used within the DI courses. A table of the sample texts organized by course level, as well as their Lexile levels, can be found in *Appendix E*.

No statistically significant results were found when comparing the text complexities across course level. $F(2, 43) = 1.12$, $p = 0.34$ ($r = 0.16$). The complexities, or Lexile levels, of these texts did not show any real difference when comparing them. The texts of level A are similar in complexity to the texts used in levels B and DI, the texts in level B classes are similar in complexity to A and DI, and texts used in level DI have similar complexities to the texts from levels A and B. The variance that does exist between the Lexile levels across course levels is most likely due to chance and not the academic level they are used in. Tables containing the analyzed data are in *Appendix F*.

Research Question 3

Does the complexity of the texts assigned in early high school vary across the disciplines?

An ANOVA was conducted to analyze the relationship between text complexities, through their Lexile levels, between the disciplines (Math, Social Studies, Science, Language Arts, and Spanish). The number of available sample texts per content area differed: Math had 7

sample texts, Social Studies had 13, Science had 11, Language Arts had 10, and Spanish had 3. *Appendix G* contains a table with the sample texts and their Lexile levels organized by discipline.

After conducting an ANOVA, a significant difference between the disciplines' text sample complexities was found $F(4, 39) = 3.00$, $p = 0.030$ ($r = 0.27$). These results indicate that the variance in text complexities between different subject areas is not likely due to chance but is, instead, likely due to differences between the disciplines' text styles. Multiple t-Tests were consequently conducted to compare the mean Lexile levels of each discipline's sample texts and determine which disciplines' texts were significantly more complex than another disciplines'. Both statistically significant and insignificant results were found.

The mean complexity score of the Spanish texts (M = 866.67L) was not significantly different than the mean complexity score of the Language Arts texts (M = 861L), $t(9) = 0.04$, $p = 0.97$. Similarly, we found that the mean complexity score of the Spanish texts (M = 866.67L) was not significantly different from the mean complexity score of the Math texts (M = 1038.57L), $t(3) = 1.75$, $p = 0.18$). When comparing the mean complexity scores of the Language Arts texts (M = 861L) and the Math texts (M = 1038.57L), no statistical difference was found $t(12) = 1.43$, $p = 0.18$. The possibility that the difference between the Social Studies texts' mean Lexile level (M = 1187.69L) and the Math texts' mean Lexile level (M = 1038.57L) was due to chance was greater than five percent $t(17) = 1.79$, $p = 0.09$, indicating that there is no statistical difference between the complexity levels of the two disciplines. Finally, the Science text mean complexity level (M = 1182.72L) did not differ significantly from the Social Studies text mean complexity level (M = 1187.69L), $t(17) = 0.04$, $p = 0.97$, nor the Math text mean complexity level (M = 1038.57L), $t(15) = 1.32$, $p = 0.21$. See *Appendix H* for tables with the completely analyzed data.

When comparing the mean complexity levels of the sample texts from each content area, one against each other one, three statistically significant relationships were found. Firstly, the mean Spanish text Lexile level (M = 866.67L) varied significantly from the mean Social Studies text Lexile level (M = 1187.69L), $t(4) = 3.13$, $p = 0.04$ (see Table 2). This indicates that the Spanish texts are less complex than the Social Studies texts. Furthermore, the possibility that this difference is due to factors other than the texts' complexity is less than five percent. There was also a significant difference in the mean Lexile level of the Spanish texts (M = 866.67L) and the mean Lexile level of the Science texts (M = 1182.72L), $t(8) = 2.54$, $p = 0.04$ (see Table 3). Once again, the Spanish texts are significantly less complex than the texts read for Science. Furthermore, there was a statistically significant difference found between the Language Arts mean text complexity (M = 861L) and the Science mean text complexity (M = 1182.72L), $t(18) = 2.20$, $p = 0.04$ (see Table 4). Lastly, the mean complexity of the Language Arts texts (M = 861L) varied significantly from the mean complexity of the Social Studies texts (M = 1187.69L), $t(14) = 2.55$, $p = 0.02$ (see Table 5). The texts used in Social Studies are found to be, therefore, significantly more complex than those used in Language Arts classes (See Table 1).

Table 1

Content Area Texts by Complexity

Content Area	**Language Arts**	**Spanish**	**Math**	**Science**	**Social Studies**
Mean Lexile Level	861L	866.67L	1038.57L	1182.72L	1187.69L
*Complexity Ranking **	5	4	3	2	1

* Rankings from 1 – 5: 1 indicates the most complex, 5 indicates the least complex based on mean text Lexile levels.

Overall, the mean Lexile levels of the different content areas' texts revealed that Language Arts texts are the least complex (M = 861L). Social Studies texts appear to be the most complex, with the highest average Lexile level (M = 1187.69L). When analyzing the disciplines and the relative complexity of the texts used within each discipline, a significant difference in complexity was found between the texts used in Spanish and Social Studies, Spanish and Science, Language Arts and Science, as well as Language Arts and Social Studies. Tables containing the fully analyzed data can be found in *Appendix H*.

Table 2

Comparison of Text Complexities within Spanish and Social Studies

Discipline	n	M	*t*	*p*
Spanish	3	866.67	--	--
Social Studies	13	1187.69	--	--
Total	16	--	2.78	0.0351

Table 3

Comparison of Text Complexities within Spanish and Science

Discipline	n	M	*t*	*p*
Spanish	3	866.67	--	--
Science	9	1158.89	--	--
Total	12	--	2.36	0.0476

Table 4

Comparison of Text Complexities within Language Arts and Science

Discipline	n	M	*t*	*p*
Language Arts	10	861	--	--
Science	11	1182.72	--	--
Total	21	--	2.20	0.0410

Table 5

Comparison of Text Complexities within Language Arts and Social Studies

Discipline	n	M	*t*	*p*
Language Arts	10	861	--	--
Social Studies	13	1187.69	--	--
Total	23	--	2.55	0.0231

Research Question 4

Does the authenticity of the texts assigned in early high school vary across the various course levels?

In order to answer this research question, each sample text was rated on a scale from 1-3 with 1 reflecting the most authenticity and 3 reflecting the least amount of authenticity, or extent to which the text reflected, the content area. The table in *Appendix I* shows each sample texts' authenticity rating. The sample texts gathered were grouped by course level (A, B, or DI) in order to compare text authenticity levels. Using an ANOVA, the authenticity rankings of the texts within each course level were compared. There was no statistical difference between the mean text authenticities when compared across levels $F(2,43) = 2.40$, $p = 0.10$ ($r = 0.24$). These results indicate that the difference in course levels does not have a significant effect on the authenticity rankings of the texts used within classes. The analyzed data is shown in *Appendix J*.

Chapter V

Discussion

Although there has been extensive research into literacy instruction in the elementary grades, when students are first learning how to read, literacy in the later grades has not been as thoroughly investigated. The implementation of continual reading instruction that simultaneously teaches students how to best read the specific texts found in differing disciplines is a relatively new phenomenon. Even though it is essential for high school students to know how to read and read *well* in order to comprehend the information being given in the texts they read across content areas, it is also important that they continue to learn reading strategies that specifically pertain to the differing texts they encounter. In doing this, students are not only continuing to practice the reading skills that they have acquired from prior schooling, but they are also elevating their reading skills across the content areas and learning new strategies to help them comprehend a variety of types of texts.

Today, most teachers (as well as students), view reading that is completed within content-specific classes as important simply because it is a way for information about a specific topic to be conveyed. Consequently, content-area classes are not generally seen as significant as explicit literacy classes when it comes to reading instruction. However, recent scholarly articles have indicated that content-specific literacy instruction, or disciplinary literacy instruction, is an important facet of overall literacy growth in students in the later grades (Biancarosa & Snow, 2010; Fang & Coatoam, 2013; Greenleaf & Heller, 2007; Hurst & Pearman, 2013; Shanahan & Shanahan, 2008). Although the use of disciplinary literacy versus content-area literacy has been a topic of academic conversation, there have not been many studies specifically focusing on

teacher views of this subject, nor has there been much research concerning the texts used, and their purposes, in content-specific classrooms.

This pilot study is one of the first studies specifically focusing on content-area teachers' views on the reading within their classes as well as the types of texts used in the later grades. Results of this study gave an idea of how content-area teachers view reading within their classrooms. The interviews and analysis of the data collected indicate that a large proportion of teachers (14 of 21 in this study specifically) hold a more content-area focused view on literacy. Reading within their classrooms was, overall, used for the purpose of giving students the content-specific information needed for the class, as well as completing and doing assignments and exams well. A smaller proportion of teachers (four of 21 in this study) held a more disciplinary view of literacy instruction within their content-specific classrooms. These teachers revealed that the purpose of reading within their classrooms focused largely on the students' use of the content learned to develop higher-order skills and complete more involved tasks. Overall, this study indicates that teachers in the higher grades tend to hold a more content-area literacy view and do not view their content-specific classes as a place for students to develop specific disciplinary reading skills.

Sample texts used in content-specific classes at the high school level (specifically ninth and tenth grade) were investigated to determine the types of texts used across disciplines as well as across class course levels. The results yielded no significant results in regards to text complexities differing from one course level to another. Interestingly, the complexities of the sample texts differed when comparing the Lexile levels of texts within certain disciplines. The complexities of the texts within the five disciplines, from the most complex to the least complex, are as follows: Social Studies, Science, Math, Spanish, and Language Arts. The results indicated

that the Social Studies texts were significantly more complex than the Language Arts and Spanish texts. Furthermore, the Science texts were significantly more complex than the texts within these two disciplines as well. Results point to the disciplines of Social Studies and Science as having complicated texts. The language used and the grammatical structure of these texts appear to be more complex than what is seen within texts in the Language Arts and Spanish, making them more challenging to read. Very interestingly, these two "less complex" subjects are more often associated with direct reading instruction, since Language Arts and Spanish classes are closely tied with more explicit reading instruction than Math, Science, and Social Studies. The disciplines with the more challenging texts (Math, Science, and Social Studies) are often viewed as subjects where reading is utilized for content instruction rather than literacy instruction in itself.

As a result of this view, the specific skills needed to best read the texts authentic to the discipline may be deemphasized. Learning within these disciplines would then lack further literacy growth as students move further into their educations. Although they received literacy instruction in the elementary grades as students first learning how to read, they would not be given instruction related to the specific strategies relevant to different disciplines. The ability to effectively read different types of texts across the disciplines becomes especially important in the later grades as students become more oriented towards one content area for their career. The addition of these particular literacy skills would benefit students in the later grades as they move into more complex and specific courses, as well as move towards a career. Consequently, it may be especially important to promote literacy instruction in these areas (Math, Science, and Social Studies) and make both students and teachers aware of the benefits associated with disciplinary literacy.

Further findings from this study revealed that the course level that a text will be used in does not relate significantly to the text's authenticity. Although it would appear logical to assume that texts used in more challenging classes would be more authentic, or more reflective of the discipline being taught and less structured for schooling purposes, there was no connection found between the authenticity of the texts and the course level they were being used in. Results indicate that texts of all authenticities can be found within all course levels.

Future Research and Implications

The limited research in the area of secondary literacy, and the gaps in the overall understanding about literacy instruction in the later grades, provides many opportunities for researchers and educators. Whereas a vast amount of time and energy has been spent understanding reading acquisition in the early grades, less is known about adolescent literacy and the qualities of effective literacy instruction in high school, where classes are content-specific and leveled.

Reading is such a pervasive and essential activity, one that remains important throughout school as well as later in life. Consequently, it is important to not only understand how students first learn how to read, but also to understand how students can continue to grow as readers. Research concerning literacy in the later grades, as well as how teachers approach their reading instruction, is worth spending time and resources on. In investigating these concepts, much more could be understood about what makes effective reading instruction and steps could be taken to improve literacy within the United States and beyond.

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Appendix A

Sample Student Schedules

A-Level Freshman (Most Advanced)

Course	Level	Content Area
English	A	Language Arts
Spanish 3	A	Language
Pre-Calculus	A	Mathematics
Biology	A	Science
Geography	A	Social Studies

A-Level Freshman (Middle-High)

Course	Level	Content Area
English	A	Language Arts
Algebra 1	A	Mathematics
Politics	B	Social Studies
Spanish 3	A	Language
Physical Science	A	Science

B-Level Freshman (Low-Middle)

Course	Level	Content Area
Physical Science	B	Science
Spanish 1	B	Language

Algebra	B	Mathematics
English	B	Language Arts
Politics	B	Social Studies

DI-Level Freshman (Least Advanced)

Course	Level	Content Area
English	B	Language Arts
Math	DI	Mathematics
Agriculture	DI	Science
Politics	B	Social Studies
Biology	DI	Science

A-Level Sophomore (Most Advanced)

Course	Level	Content Area
Pre-Calculus	A	Mathematics
English	A	Language Arts
Chemistry	A	Science
U.S. History	AP	Social Studies
Spanish 3	A	Language

A-Level Sophomore (Middle-High)

Course	Level	Content Area

Algebra 2	A	Mathematics
English	A	Language Arts
Spanish 3	A	Language
Chemistry	A	Science
U.S. History	A	Social Studies

B-Level Sophomore (Low-Middle)

Course	Level	Content Area
U.S. History	B	Social Studies
English	B	Language Arts
Spanish 1	B	Language
Geometry	A	Mathematics
Biology	B	Science

DI-Level Sophomore (Least Advanced)

Course	Level	Content Area
English	DI	Language Arts
U.S. History	B	Social Studies
Agriculture	DI	Science
Math	DI	Mathematics
Content Area Reading	DI	Language Arts

Appendix B

Semi-Structured Interview Protocol

Content

1. What is/are the topic(s) of your _____ course this week and last? *[text type & purpose for reading]*
2. What goals/objectives were you addressing over these two weeks of instruction? *[purpose for reading or not]*

Reading

1. What texts did students READ over the past two weeks?
    a. Can I see examples of these? *(scan or take photos)*
    b. Where did these texts come from/where did you find them? *[source of text]*
    c. Why did you select these particular texts?
    d. Have you used these texts before?

2. What were students asked to do with these texts?
    a. What was the purpose for reading them?
    b. What did students know about the purpose for reading them?

3. Were you happy with this choice of reading assignment? Why/why not?

4. What do you hope students learn about (*topic*; *discipline*) by reading this type of text?
5. What do students know about how to read this type of text?

6. What challenges did your students face in reading these texts?

Writing

1. What texts did students WRITE over the past two weeks? *[notes? copy homework? worksheet?]*
    a. Can I see examples of these? *(scan or take photos)*

2. What were students asked to do with these texts?
    a. What was the purpose for writing them?
    b. What/who was the audience for this writing?
    c. What did students know about the purpose for writing them?

3. Were you happy with this choice of writing assignment? Why/why not?

4. What do you hope students learn about (*topic*; *discipline*) by writing this type of text?

5. What do students know about how to write this type of text?

6. How do these texts compare to the texts you use in other typical weeks?

7. What challenges did your students face in writing these texts?

*Do you teach any other courses on this list?

Appendix C

Teacher Literacy Views

	Content-Area Literacy (C-A L)				Disciplinary Literacy (DL)			
	Know	**Answer**	**Main Idea**	**Assignments**	**Analyze**	**Deeper Thinking**	**Perspective**	**C-A L:DL Ratio**
Language Arts	--	--	1	--	1	2	--	1:3
	1	--	1	--	--	--	--	2:0
	--	--	--	2	--	--	--	2:0
	--	--	--	2	2	--	1	2:3
	1	1	2	3	--	--	--	7:0
Math	1	--	--	1	--	--	--	2:0
	--	--	1	--	--	1	--	1:1
	1	--	--	--	--	--	--	1:0
Science	--	--	--	3	--	--	--	3:0
	1	--	3	1	--	--	--	5:0
	--	--	2	2	--	--	--	4:0
	2	1	1	--	--	--	--	4:0
	--	--	--	2	--	--	--	2:0
Social Studies	--	1	--	--	2	--	--	1:2
	2	--	3	--	--	--	--	5:0
	--	--	1	1	1	--	--	2:1
	1	--	1	--	1	--	--	2:1
	--	--	--	--	--	--	2	0:2
	--	--	5	4	--	--	--	9:0
	--	--	--	1	3	--	1	1:4
Spanish	1	--	1	--	1	--	4	2:5

Appendix D

Teacher Interview Excerpts

Discipline of Teacher	*Interview Excerpt*
Language Arts	1. Why did you select these particular texts? - Curricular necessity - Supplemental deeper understanding 2. What goals/objectives were you addressing over these two weeks of instruction? [purpose for reading or not] - Close readings of passages - Considering author word choice - Patterns in writing - Making real life to text connections 3. What do you hope students learn about (topic; discipline) by reading this type of text? - Importance of emotion when reading passages "kaleidoscope"
	1. What goals/objectives were you addressing over these two weeks of instruction? [purpose for reading or not] - Comprehending plot - Picking out literary devices - Heroes qualities 2. Why did you select these particular texts? - Short, readable, not super technical - Ereliable sources of heros - Modeling reliable sourcing 3. What was the purpose for reading them? - Read it to read it because we have to it's on the curriculum, it's a british literature year - Watching for heroes qualities in there, especially for him because he's (Beowolf) so unheroic 4. What do you hope students learn about (topic; discipline) by reading this type of text? - Beowolf specifically, don't be intimidated by the story
	1. What goals/objectives were you addressing over these two weeks of instruction? [purpose for reading or not] - Writing style - Voice - Themes (guilt, loss, lust, trauma, memory and its weight) 2. What was the purpose for reading them?

	- Look at how stories are used to deal with traumatic memory 3. <u>What did students know about the purpose for reading them?</u> - Reading quizzes for grade - Midyear essay 4. <u>What do you hope students learn about (topic; discipline) by reading this type of text?</u> - Use of text to deal with trauma
	1. <u>What were students asked to do with these texts?</u> - Get evidence for their papers - Connect to ideas in of mice and men 2. <u>What do you hope students learn about (topic; discipline) by reading this type of text?</u> - To see how a range of reading can help them develop their own point of view on a topic and it's importance in society - Synthesizing - Format a college level paper (MLA components)
	1. <u>What goals/objectives were you addressing over these two weeks of instruction? [purpose for reading or not]</u> - Recognize text structure/ author's purpose (learn how to take notes) - Know how to interpret vocabulary 2. <u>Why did you select these particular texts?</u> - Had text structure that was being taught - Could adjust the lexile level per class 3. <u>What was the purpose for reading them?</u> - Practice identifying author's purpose/text structure - Use graphic organizers to extract information - Practice for future projects (multiple sources) 4. <u>What did students know about the purpose for reading them?</u> - Objective put on the board (knew what was being studied) - Practice 5. <u>What do you hope students learn about (topic; discipline) by reading this type of text?</u> - Be more successful in other classes
	1. <u>What was the purpose for reading them?</u> - Complete mathematical equations through word problems 2. <u>What do you hope students learn about (topic/discipline) by reading this type of text?</u> - Use most of reading to help learn/understand procedures

Math	1. What do you hope students learn about (topic; discipline) by reading this type of text? - A logical sequence, the big picture. I don't want to be parrots, so we show different options of how to do things, think on their own - and sometimes they're creative so give them the tools: where are we going, how are we going to get there, we start talking mathematically to talk about how we can solve it and can help each other on the board.
	1. What do you hope students learn about (topic; discipline- simplifying radicals & rationale exponents/radical equations) by reading this type of text? - Know it well, at this level
Science	1. What was the purpose for reading them? - Copy notes word for word, or in their own words (what it means to you, but they mostly write too much) 2. What did students know about the purpose for reading them? - To take notes to prep for quizzes and texts.
	1. What goals/objectives were you addressing over these two weeks of instruction? [purpose for reading or not] - Have students understand transfer of energy in biological systems - Describe respiration in the terms of what makes it up and how it combines to make the whole process 2. What was the purpose for reading them? - Resource for students - Reinforce concepts from class - Used to teach basic concepts in class 3. What did students know about the purpose for reading them? - Reading for learning of concepts - Questions given to highlight important parts of text (teacher made)
	1. What was the purpose for reading them? - Explain content, reinforce what's done in class - Give them content what they don't do in class 2. What did students know about the purpose for reading them? - Practice - Reinforce ideas 3. What do you hope students learn about (topic; discipline) by reading this type of text? - Have another resource - Practice problems - Reinforcement

	1. What goals/objectives were you addressing over these two weeks of instruction? [purpose for reading or not] - Calculate rations - Identify parts/functions of equine digestive tract 2. Why did you select these particular texts? - Importance: mammal helps to reforest - Research-based article (promotes greater understanding) 3. What was the purpose for reading them? - "Augment class work that day for greater understanding" - Improve reading skills - Encourage students to read more scientific texts - College preparation - Increased vocabulary base 4. What did students know about the purpose for reading them? reinforce learning for that day - To help with homework 5. Why did you select these particular texts? - Importance: mammal helps to reforest - Research-based article (promotes greater understanding)
	1. What was the purpose for reading them? - No homework - Read together, take turns reading out loud (summarize if it wasn't fluent) - Try to answer questions by self and then go over it together as a group 2. What did students know about the purpose for reading them? - Reading in order to answer the question 3. What do you hope students learn about (topic; discipline) by reading this type of text? - Cells - Body systems (brain, bones, joints) learned - Things about the body that they never imagined (especially about the brain, optical illusions)
	1. What do you hope students learn about (topic; discipline) by reading this type of text? - Factors of push and pull ---------- 1. What do you hope students learn about (topic; discipline) by reading this type of text? - Sourcing - Corroboration - Identifying high quality evidence

Social Studies	- Analyzing a problem 2. <u>What goals/objectives were you addressing over these two weeks of instruction? [purpose for reading or not]</u> - Period of WWII: raise and consider key questions by using multiple source docs
	1. <u>Why did you select these particular texts?</u> - more info/better understanding, - explained how citizens are moving around/predictions made - shows how prediction was wrong, gave knowledge about human place - interesting topic/research; led to good topics; why/how urbanization affects people - think reading level is appropriate/prepares a lot of info 2. <u>What were students asked to do with these texts? What was the purpose for reading them?</u> - help better understand the different parts of CT - how geography impacted the types of businesses/type of landscape - better prepare background knowledge of atomic bomb dropping for upcoming essay
	1. <u>What was the purpose for reading them?</u> - Gather information to fill in worksheet and create powerpoint to present in class using credible sources and peers have a notetaking sheet when watching presentations that gets them to ask questions
	1. <u>What goals/objectives were you addressing over these two weeks of instruction? [purpose for reading or not]</u> - Persuasive writing - Be able to write a letter - Be able to analyze primary/secondary source documents 2. <u>What was the purpose for reading them?</u> - Give them relevant information - Evidence to formulate an opinion and defend it - Cite texts 3. <u>What do you hope students learn about (topic; discipline) by reading this type of text?</u> - Be an informed citizen/voter - Know how the political system works - Be an active participant in local/national politics - take their own stance, evaluate options, come to own conclusions
	1. <u>What was the purpose for reading them?</u> - Students took notes on the textbook (followed by reading quiz- multiple choice) - Article = for class discussion 2. <u>What did students know about the purpose for reading them?</u>

	- Quiz for a grade - Reinforcing important skills associated with history (analyzing, discussing, forming an opinion about primary sources; taking notes) 3. <u>What do you hope students learn about (topic; discipline) by reading this type of text?</u> - Content information - Learning to take notes
	1. <u>What was the purpose for reading them?</u> - 5-6 complex (essay type) questions on chapter/Zinn per week 2. <u>What did students know about the purpose for reading them?</u> - Questions to go along - Content knowledge - Class discussion - Prep for tests (come from textbook) 3. <u>What do you hope students learn about (topic; discipline) by reading this type of text?</u> - Content material (information)
	1. <u>What goals/objectives were you addressing over these two weeks of instruction? [purpose for reading or not]</u> - People's experiences, Howard Zinn people's history idea - Look at history from minority points of view: women's experiences, teens, african americans, japanese americans and how equal america really is(isn't) in these years - Thread throughout the whole year = equality, new this year to have a common thread. 2. <u>What was the purpose for reading them?</u> - Reading and then talking or reading and then writing a short response - Open discussions: socratic style 3. <u>What do you hope students learn about (topic; discipline) by reading this type of text?</u> - Upfront: SS is applicable to today, current, fresh - make connections to now - Primary sources: this stuff doesn't go away, presidents still give speeches after big events, draw connections.... what does it say about you, society, our world... our department is known for questioning everything and not taking anything lying down.
Spanish	1. <u>What was the purpose for reading them?</u> - More analytical - Using context clues (do not know words, use those they do to figure out the meaning) - More higher-thinking (compare/contrast, connections to outside of text) 2. <u>What do you hope students learn about (topic; discipline) by reading this type of text?</u> - To use context clues to figure out what they do not know - Importance of using context clues when in a real world situation with a native speaker ----------

	1. <u>What was the purpose for reading them?</u> - Identifying vocabulary - Use tiny details "adjective agreement" - Overall comprehension

Appendix E

Text Complexities By Course Level

Level A

		Lexile Analyzer		
Text Title	**Brief Description**	**Lexile Level**	**Mean Sentence Length**	**Course Level**
Advanced Mathematical Concepts (Precalculus with applications)	course textbook	1110L	16.23 words	A
Biology: A Guide to the Natural World (Chapter 7: Deriving Energy from Food) by David Krogh	course textbook	1060L	17.55 words	A
Romeo and Juliet by Shakespeare	written as a play, definitions of Old English words/phrases	530L	7.75 words	A
Romeo and Juliet: A Parallel Text by Shakespeare	play, adapted into Old and Modern English	1190L	19.24 words	A
Geometry Integration Applications Connections	course textbook	1030L	16.65 words	A
Pain Killers PowerPoint	PowerPoint made by teacher	870L	12.67 words	A
!Exprésate!	course textbook	880L	13.6 words	A
Cocina Tradicional	article from Spanish Education Department (online)	720L	11.75 words	A
Chief Seattle's Oration	primary resource referenced in the course's textbook	1260L	20.95 words	A
The American Journey (Chapter 17: A New South: Economic Progress and Social Tradition 1877-1900)	course textbook	1250L	19.46 words	A
City Living Affects Your Brain, Research Finds	article from online (the Guardian)	1300L	21.55 words	A
U.S. Megalopolises 50 Years Later	article from online (PRB)	1380L	22.00 words	A
RFP for Plan of Conversation and Development	article from online (Windham Town Hall)	1040L	14.68 words	A
Intermediate Algebra	course textbook	1170L	18.56 words	A
Chemistry (Pearson)	course textbook	1710L	37.00 words	A
A Letter to My Son by Tim O'Brien	article from online	1000L	15.48 words	A
The Year of Unearthed Memories by David Brooks	article from online (New York Times)	1170L	17.72 words	A
A People's History of the United States by Howard Zinn	supplementary book, used with the course's textbook	1140L	19.67 words	A
America's History (Chapter 10: A Democratic Revolution)	course textbook	1430L	25 words	A

Level B

		Lexile Analyzer		
Text Title	**Brief Description**	**Lexile Level**	**Mean Sentence Length**	**Course Level**
Algebra 1 Common Core	course textbook	880L	12.50 words	B
Algebra 2 Common Core	course textbook	1200L	18.07 words	B
Of Mice and Men by John Steinbeck	book	890L	13.47 words	B
Romeo & Juliet: A Young Reader's Shakespeare by Adam McKeown	book, adapted from Shakespeare's play Romeo & Juliet	1060L	17.48 words	B
America's Fastest - And Slowest - Growing Cities (article)	article from online	1430L	22.00 words	B
Detroit Most Miserable City in America: Forbes Ranking (article)	article from online/teacher made follow-up questions	1390L	22.69 words	B
How long does it take for plastics to biodegrade?	article from NewsELA online	1160L	17.84 words	B
Polymers Powerpoint	PowerPoint made by teacher	1290L	16.67 words	B
PE: The Wonder Polymer	article/follow-up questions from textbook	880L	12.00 words	B
What are Polymers?	article/follow-up questions from online	1320L	16.83 words	B
To Kill or Not to Kill? by Patricia Smith	article from Upfront Magazine (New York Times)	1170L	16.08 words	B
Why the Death Penalty Should Live by Adrianne Haslet-Davis	article from online (found by the Professional Learning Committee, meets once a week to decide on articles)	900L	14.29 words	B
!En Español!	course textbook	1000L	19.2 words	B
Greetings from Hell... by Dina Mironovna Pronicheva	"text set" from online resource	1090L	17.26 words	B
Excerpt from Night by Elie Wiesel	"text set" from online resource	660L	9.89 words	B
Algebra 2 Common Core Teachers Edition	course textbook	1070L	15.00 words	B
Geometry Common Core Teachers Edition Volume 1	course textbook	810L	11.94 words	B
A Letter to My Son by Tim O'Brien	article from online	1000L	15.48 words	B
The Year of Unearthed Memories by David Brooks	article from online (New York Times)	1170L	17.72 words	B

Level DI

		Lexile Analyzer		
Text Title	**Brief Description**	**Lexile Level**	**Mean Sentence Length**	**Course Level**
Flying Squirrels	article from online/colleagues	1260L	18.9 words	DI
Wild Turkeys	article from online/colleagues	1350L	21.47words	DI
Horse Cardiovascular System	article from online/colleagues	1500L	24.06 words	DI
The Human Body (Unit 3: More Body Systems- Digestive System: Nutrients)	course textbook	610L	8.5 words	DI
A History of Computers by Karl Wallulis	article from Newsela.com (online source where articles can be found based on Lexile level)	1290L	20.94 words	DI
Opinion: save elephants and rhinos; don't buy anything made of ivory!	article from Newsela.com (online source where articles can be found based on Lexile level)	610L	8.04 words	DI
Beowulf: A New Telling	book, adapted from Beowulf	700L	11.50 words	DI
YOLO Juliet	book, adapted from Romeo and Juliet	170L	4.71 words	DI

Appendix F

Text Complexities By Course Level—Analyzed Data

ANOVA: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
A	19	21240	1117.89	69539.77
B	19	20370	1072.11	42628.65
DI	8	7490	936.25	224969.64

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	186467.88	2	93233.94	1.12	0.34	3.21
Within Groups	3593819.08	43	83577.19			
Total	3780286.96	45				

Appendix G

Text Complexities By Discipline

Social Studies Sample Texts

		Lexile Analyzer	
Text Title	**Brief Description**	**Lexile Level**	**Mean Sentence Length**
A People's History of the United States by Howard Zinn	supplementary book, used with the course's textbook	1140L	19.67 words
America's History (Chapter 10: A Democratic Revolution)	course textbook	1430L	25 words
To Kill or Not to Kill? (article) by Patricia Smith	article from Upfront Magazine (New York Times)	1170L	16.08 words
Why the Death Penalty Should Live by Adrianne Haslet-Davis	article from online (found by the Professional Learning Committee, meets once a week to decide on articles)	900L	14.29 words
Chief Seattle's Oration	primary resource (article) referenced in the course's textbook	1260L	20.95 words
The American Journey (Chapter 17: A New South: Economic Progress and Social Tradition 1877-1900)	course textbook	1250L	19.46 words
City Living Affects Your Brain, Research Finds	article from online (the Guardian)	1300L	21.55 words
U.S. Megalopolises 50 Years Later	article from online (PRB)	1380L	22.00 words
RFP for Plan of Conversation and Development	article from online (Windham Town Hall)	1040L	14.68 words
America's Fastest - And Slowest - Growing Cities	article from online	1430L	22.00 words
Detroit Most Miserable City in America: Forbes Ranking	article from online/teacher made follow-up questions	1390L	22.69 words
Greetings from Hell... by Dina Mironovna Pronicheva	"text set" from online resource	1090L	17.26 words
Excerpt from Night by Elie Wiesel	"text set" from online resource	660L	9.89 words

Math Sample Texts

		Lexile Analyzer	
Text Title	**Brief Description**	**Lexile Level**	**Mean Sentence Length**
Algebra 1 Common Core	course textbook	880L	12.50 words
Intermediate Algebra	course textbook	1170L	18.56 words
Algebra 2 Common Core	course textbook	1200L	18.07 words
Geometry Integration Applications Connections	course textbook	1030L	16.65 words
Geometry Common Core Teachers Edition Volume 1	course textbook	810L	11.94 words
Algebra 2 Common Core Teachers Edition	course textbook	1070L	15.00 words
Advanced Mathematical Concepts (Precalculus with applications)	course textbook	1110L	16.23 words

Language Arts Sample Texts

		Lexile Analyzer	
Text Title	**Brief Description**	**Lexile Level**	**Mean Sentence Length**
“A History of Computers” by Karl Wallulis	article from Newsela.com (online source where articles can be found based on Lexile level)	1290L	20.94 words
“Opinion: save elephants and rhinos; don't buy anything made of ivory!“	article from Newsela.com (online source where articles can be found based on Lexile level)	610L	8.04 words
“A Letter to My Son” by Tim O'Brien	article from online	1000L	15.48 words
“The Year of Unearthed Memories” by David Brooks	article from online (New York Times)	1170L	17.72 words
Romeo & Juliet: A Young Reader's Shakespeare by Adam McKeown	book, adapted from Shakespeare's play Romeo & Juliet	1060L	17.48 words
Romeo and Juliet by Shakespeare	written as a play, definitions of Old English words/phrases	530L	7.75 words
Romeo and Juliet: A Parallel Text by Shakespeare	play, adapted into Old and Modern English	1190L	19.24 words
Beowulf: A New Telling	book, adapted from Beowulf	700L	11.50 words
YOLO Juliet	book, adapted from Romeo and Juliet	170L	4.71 words
Of Mice and Men by John Steinbeck	book	890L	13.47 words

Science Sample Texts

		Lexile Analyzer	
Text Title	**Brief Description**	**Lexile Level**	**Mean Sentence Length**
Biology: A Guide to the Natural World (Chapter 7: Deriving Energy from Food) by David Krogh	course textbook	1060L	17.55 words
The Human Body (Unit 3: More Body Systems- Digestive System: Nutrients)	course textbook	610L	8.5 words
Flying Squirrels	article from online/colleagues	1260L	18.9 words
Horse Cardiovascular System	article from online/colleagues	1500L	24.06 words
Wild Turkeys	article from online/colleagues	1350L	21.47words
How long does it take for plastics to biodegrade?	article from NewsELA online	1160L	17.84 words
Polymers PowerPoint	PowerPoint made by teacher	1290L	16.67 words
PE: The Wonder Polymer	article/follow-up questions from textbook	880L	12.00 words
What are Polymers?	article/follow-up questions from online	1320L	16.83 words

Spanish Sample Texts

		Lexile Analyzer	
Text Title	**Brief Description**	**Lexile Level**	**Mean Sentence Length**
!En Español!	course textbook	1000L	19.2 words
!Exprésate!	course textbook	880L	13.6 words
Cocina Tradicional	article from Spanish Education Department (online)	720L	11.75 words

Appendix H

Text Complexities By Discipline—Analyzed Data

ANOVA: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Spanish	3	2600	866.67	19733.33
Language Arts	10	8610	861	124832.22
Social Studies	13	15440	1187.69	51019.23
Math	7	7270	1038.57	21147.62
Science	11	13010	1182.73	97601.82

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	887097.30	4	221774.33	3.00	0.03	2.61
Within Groups	2878091.33	39	73797.21			
Total	3765188.64	43				

t-Test: Two-Sample Assuming Unequal Variances (Not Significant)

	Spanish	*Language Arts*
Mean	866.67	861
Variance	19733.33	124832.22
Observations	3	10
Hypothesized Mean Difference	0	
df	9	
t Stat	0.04	
P(T<=t) one-tail	0.48	
t Critical one-tail	1.83	
P(T<=t) two-tail	0.97	
t Critical two-tail	2.26	

t-Test: Two-Sample Assuming Unequal Variances (Significant)

	Spanish	*Social Studies*
Mean	866.67	1187.69
Variance	19733.33	51019.23
Observations	3	13
Hypothesized Mean Difference	0	
df	4	
t Stat	-3.13	
P(T<=t) one-tail	0.02	
t Critical one-tail	2.13	
P(T<=t) two-tail	0.04	
t Critical two-tail	2.78	

t-Test: Two-Sample Assuming Unequal Variances (Not Significant)

	Spanish	*Math*
Mean	866.67	1038.57
Variance	19733.33	21147.62
Observations	3	7
Hypothesized Mean Difference	0	
df	3	
t Stat	-1.75	
P(T<=t) one-tail	0.09	
t Critical one-tail	2.35	
P(T<=t) two-tail	0.18	
t Critical two-tail	3.18	

t-Test: Two-Sample Assuming Unequal Variances (Significant)

	Spanish	*Science*
Mean	866.67	1182.73
Variance	19733.33	97601.81

Observations	3	11
Hypothesized Mean Difference	0	
df	8	
t Stat	-2.54	
P(T<=t) one-tail	0.02	
t Critical one-tail	1.86	
P(T<=t) two-tail	0.03	
t Critical two-tail	2.31	

t-Test: Two-Sample Assuming Unequal Variances (Significant)

	Language Arts	*Social Studies*
Mean	861	1187.69
Variance	124832.22	51019.23
Observations	10	13
Hypothesized Mean Difference	0	
df	14	
t Stat	-2.55	
P(T<=t) one-tail	0.01	
t Critical one-tail	1.76	
P(T<=t) two-tail	0.02	
t Critical two-tail	2.14	

t-Test: Two-Sample Assuming Unequal Variances (Not Significant)

	Language Arts	*Math*
Mean	861	1038.57
Variance	124832.22	21147.62
Observations	10	7
Hypothesized Mean Difference	0	

df	12
t Stat	-1.43
P(T<=t) one-tail	0.09
t Critical one-tail	1.78
P(T<=t) two-tail	0.18
t Critical two-tail	2.18

t-Test: Two-Sample Assuming Unequal Variances (Significant)

	Language Arts	*Science*
Mean	861	1182.73
Variance	124832.22	97601.82
Observations	10	11
Hypothesized Mean Difference	0	
df	18	
t Stat	-2.20	
P(T<=t) one-tail	0.02	
t Critical one-tail	1.73	
P(T<=t) two-tail	0.04	
t Critical two-tail	2.10	

t-Test: Two-Sample Assuming Unequal Variances (Not Significant)

	Social Studies	*Math*
Mean	1187.69	1038.57
Variance	51019.23	21147.62
Observations	13	7
Hypothesized Mean Difference	0	
df	17	
t Stat	1.79	
P(T<=t) one-tail	0.05	

t Critical one-tail	1.74
P(T<=t) two-tail	0.09
t Critical two-tail	2.11

t-Test: Two-Sample Assuming Unequal Variances (Not Significant)

	Social Studies	*Science*
Mean	1187.69	1182.73
Variance	51019.23	97601.82
Observations	13	11
Hypothesized Mean Difference	0	
df	17	
t Stat	0.04	
P(T<=t) one-tail	0.48	
t Critical one-tail	1.74	
P(T<=t) two-tail	0.97	
t Critical two-tail	2.11	

t-Test: Two-Sample Assuming Unequal Variances (Not Significant)

	Math	*Science*
Mean	1038.57	1182.73
Variance	21147.62	97601.82
Observations	7	11
Hypothesized Mean Difference	0	
df	15	
t Stat	-1.32	
P(T<=t) one-tail	0.10	
t Critical one-tail	1.75	

P(T<=t) two-tail	0.21
t Critical two-tail	2.13

Appendix I

Sample Text Authenticity Ratings by Course Level

Level A

Text Title	Brief Description	Authenticity Rating *	Course Level
Advanced Mathematical Concepts (Precalculus with applications)	course textbook	2	A
Biology: A Guide to the Natural World (Chapter 7: Deriving Energy from Food) by David Krogh	course textbook	2	A
Romeo and Juliet by Shakespeare	written as a play, definitions of Old English words/phrases	1	A
Romeo and Juliet: A Parallel Text by Shakespeare	play, adapted into Old and Modern English	1	A
Geometry Integration Applications Connections	course textbook	3	A
Pain Killers PowerPoint	PowerPoint made by teacher	3	A
!Exprésate!	course textbook	2	A
Cocina Tradicional	article from Spanish Education Department (online)	1	A
Chief Seattle's Oration	primary resource referenced in the course's textbook	1	A
The American Journey (Chapter 17: A New South: Economic Progress and Social Tradition 1877-1900)	course textbook	2	A
City Living Affects Your Brain, Research Finds	article from online (the Guardian)	1	A
U.S. Megalopolises 50 Years Later	article from online (PRB)	1	A
RFP for Plan of Conversation and Development	article from online (Windham Town Hall)	1	A
Intermediate Algebra	course textbook	2	A
Chemistry (Pearson)	course textbook	2	A
A Letter to My Son by Tim O'Brien	article from online	2	A
The Year of Unearthed Memories by David Brooks	article from online (New York Times)	1	A
A People's History of the United States by Howard Zinn	supplementary book, used with the course's textbook	2	A
America's History (Chapter 10: A Democratic Revolution)	course textbook	2	A

Level B

Text Title	Brief Description	Authenticity Rating *	Course Level
Algebra 1 Common Core	course textbook	2	B
Algebra 2 Common Core	course textbook	2	B
Of Mice and Men by John Steinbeck	book	1	B
Romeo & Juliet: A Young Reader's Shakespeare by Adam McKeown	book, adapted from Shakespeare's play Romeo & Juliet	2	B
America's Fastest - And Slowest - Growing Cities (article)	article from online	1	B
Detroit Most Miserable City in America: Forbes Ranking (article)	article from online/teacher made follow-up questions	3	B
How long does it take for plastics to biodegrade?	article from NewsELA online	2	B
Polymers Powerpoint	PowerPoint made by teacher	3	B
PE: The Wonder Polymer	article/follow-up questions from textbook	2	B
What are Polymers?	article/follow-up questions from online	2	B
To Kill or Not to Kill? by Patricia Smith	article from Upfront Magazine (New York Times)	1	B
Why the Death Penalty Should Live by Adrianne Haslet-Davis	article from online (found by the Professional Learning Committee, meets once a week to decide on articles)	1	B
!En Español!	course textbook	2	B
Greetings from Hell... by Dina Mironovna Pronicheva	"text set" from online resource	2	B
Excerpt from Night by Elie Wiesel	"text set" from online resource	2	B
Algebra 2 Common Core Teachers Edition	course textbook	2	B
Geometry Common Core Teachers Edition Volume 1	course textbook	2	B
A Letter to My Son by Tim O'Brien	article from online	2	B
The Year of Unearthed Memories by David Brooks	article from online (New York Times)	1	B

Level DI

Text Title	Brief Description	Authenticity Rating *	Course Level
Flying Squirrels	article from online/colleagues	2	DI
Wild Turkeys	article from online/colleagues	2	DI
Horse Cardiovascular System	article from online/colleagues	2	DI
The Human Body (Unit 3: More Body Systems-Digestive System: Nutrients)	course textbook	2	DI
A History of Computers by Karl Wallulis	article from Newsela.com (online source where articles can be found based on Lexile level)	3	DI
Opinion: save elephants and rhinos; don't buy anything made of ivory!	article from Newsela.com (online source where articles can be found based on Lexile level)	3	DI
Beowulf: A New Telling	book, adapted from Beowulf	2	DI
YOLO Juliet	book, adapted from Romeo and Juliet	2	DI

Scale = 1 - 3: 1 = Professionals may use this text, 2 = Text is specific to discipline (e.g. a textbook), but generally not used outside of school, 3 = Text is nonspecific and for school use only

Appendix J

Sample Text Authenticity Ratings—Analyzed Data

ANOVA: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
A	19	32	1.68	0.45
B	19	35	1.84	0.36
DI	8	18	2.25	0.21

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1.80	2	0.90	2.40	0.10	3.21
Within Groups	16.13	43	0.38			
Total	17.93	45				